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COLUMBIA POINT PENINSULA REVITALIZATION PROGRAM

IMPACT ASSESSMENT OF PROPOSED STREET IMPROVEMENTS

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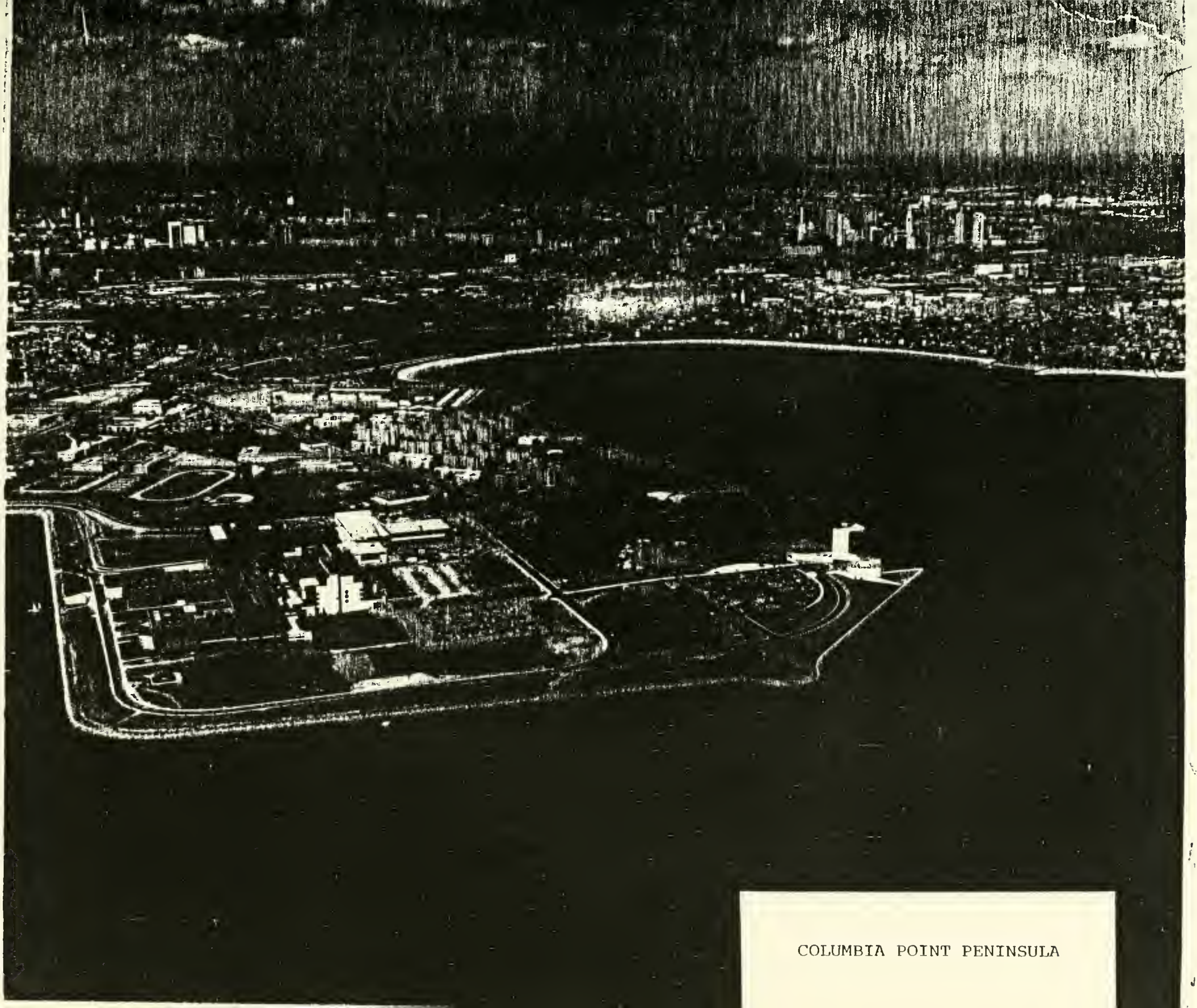

COLUMBIA POINT PENINSULA

SUMMARY

This report assesses the transportation impacts of proposed roadway improvements, recognizing certain proposed developments at Columbia Point, including 200,000 square feet of office space and 20,000 square feet of retail space for the Bayside Exposition Center, 1400 units of mixed income housing on the public housing site of the Boston Housing Authority, plus 40,000 square feet of retail and a 200-room hotel, or equivalent traffic generator, to be located in the area of the Calf Pasture pumping station.

The analysis calculates existing and future traffic levels of service as the chief indicator of the relative quality of traffic operations and key points of congestion in the roadway system. The relationship of other modes of transportation is also discussed, as well as alternatives to the roadway improvement scheme.

It is concluded that the impact of the new development is chiefly discernable in its immediate environs, as the amount of traffic generated represents only a small percentage of the general traffic on arterial roadways in the area. The net increase in vehicular trips to or from, under 8,000 per typical weekday, represents about 8 percent of total traffic crossing a cordon line drawn around the development area. A preferred set of roadway changes is identified to serve the future traffic demands.

Numerical results from roadway capacity anlayses performed as part of this study can be used as input for air quality analyses and are available separately.

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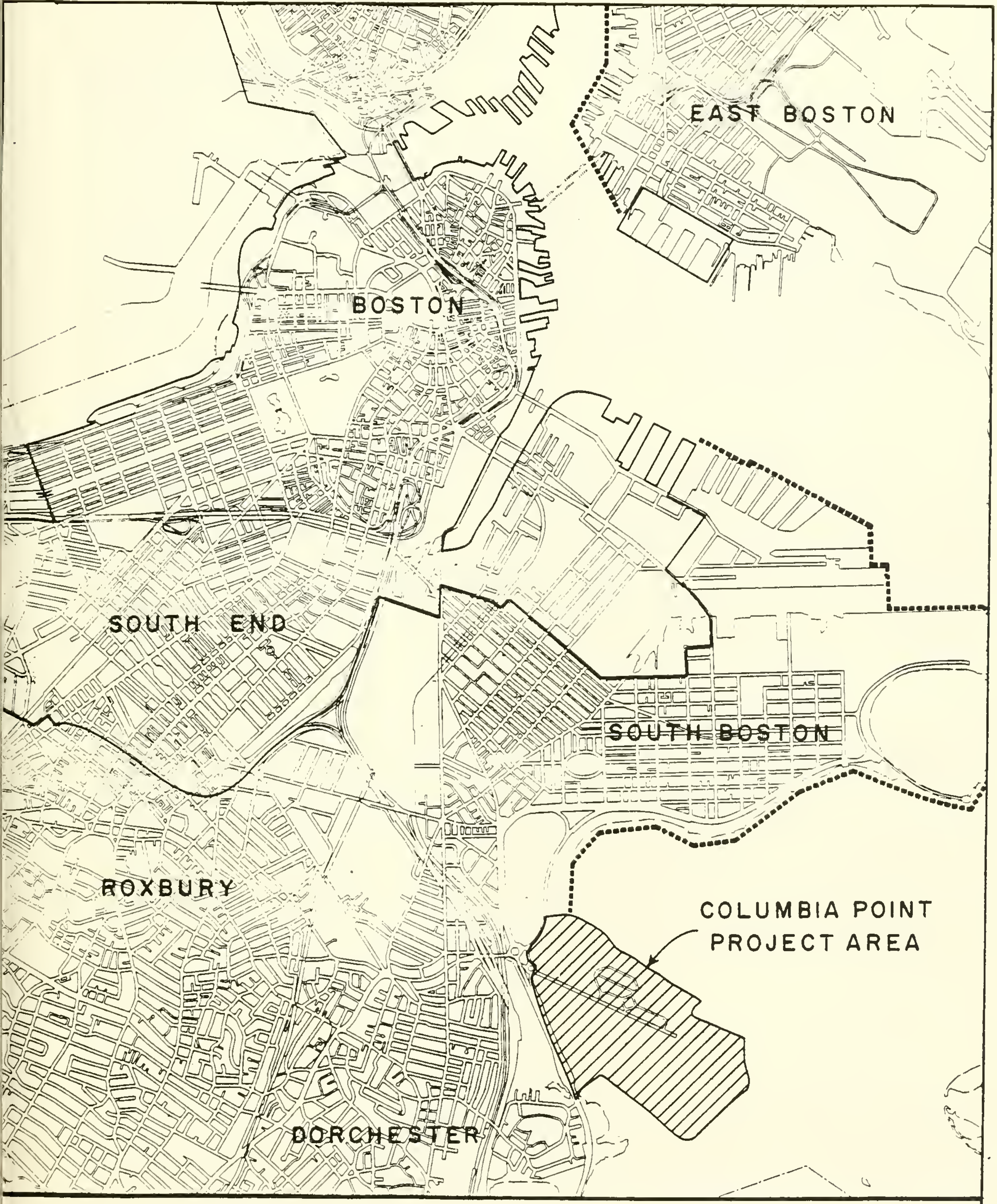

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NEIGHBORHOOD LOCATION MAP

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FIGURE 1

I. INTRODUCTION

PURPOSE OF REPORT

The purpose of this report is to describe and assess the transportation impacts of proposed street improvements at Columbia Point in Dorchester, as part of an Environmental Impact Report required under the Massachusetts Environmental Policy Act. This "Transportation Impacts Report" will be incorporated into the EIR and will take into account the trip generating characteristics of certain proposed new development. Funding for identified street improvements, at least in part, will come from an Urban Development Action Grant of the U.S. Department of Housing and Urban Development. Requirements for environmental analyses under state law have been defined by the Executive Office of Environmental Affairs (EOEA) in an EIR Scope.

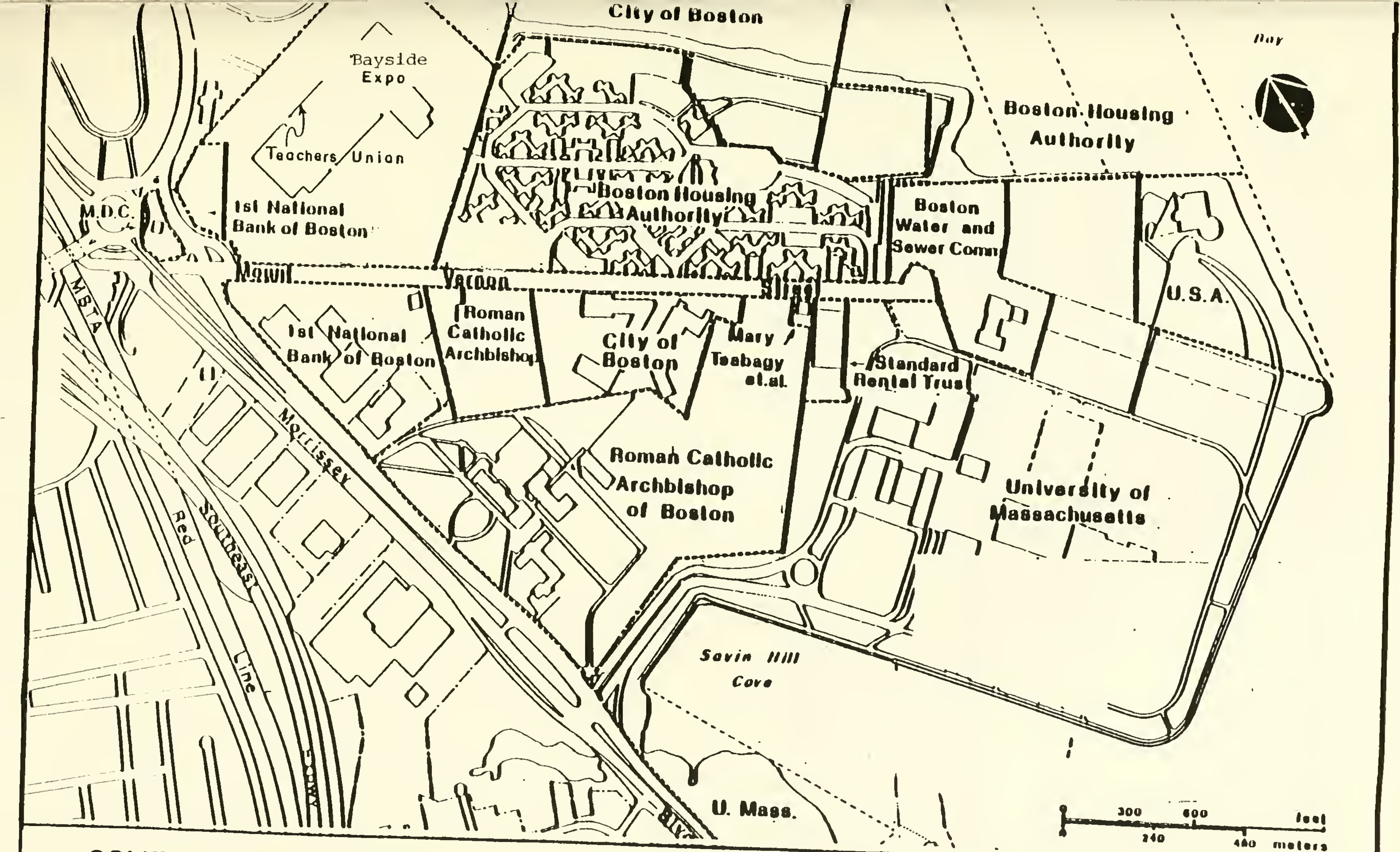
SETTING

Columbia Point is located relatively close to Downtown Boston with an attractive shoreline setting on Dorchester Bay (see Figure 1). It has fairly direct access from major roadways such as the Southeast Expressway (I-93), Morrissey Boulevard and Columbia Road. In addition, it is in close proximity to JFK/U-Mass Station on the Red Line rapid transit. Despite these advantages, large areas of the peninsula remained undeveloped until the 1970's. Schools and viable commercial development were chiefly clustered along Morrissey Boulevard, but the large public housing project, completed in 1953 was (and is) in a serious state of decline and deterioration. The adjacent Bayside Shopping Mall went out of business, leaving only the headquarters of the Boston Teachers Union still open.

Major new development decisions were made during the 1970's. The University of Massachusetts built its Harbor Campus, now serving about 12,000 students, and the John F. Kennedy Presidential Library was constructed nearby. The State Archives Building has been completed between U-Mass and the Library. Into this evolving situation actions have been taken among the private sector, Boston Redevelopment Authority, Boston Housing Authority and others to revitalize the former Bayside Mall and the deteriorated housing. This has resulted in the recent renovation of the Mall as the Bayside Exposition Center and a housing development team being designated by BRA and BHA. Various land owners on or adjacent to the total Columbia Point Peninsula are shown (see Figure 2), to indicate the various concerns involved or interested in area revitalization.

DEVELOPMENT PROGRAM

EIR requirements have identified three years for traffic analysis - 1984 existing, 1990 with the bulk of proposed new development having occurred, and year 2000 with an additional development increment. Existing conditions are well represented by current traffic counts. Future years also have a general growth factor applied.



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PARCEL OWNERSHIP

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FIGURE 2

Listed below are the proposed development programs associated with each impact assessment year. The year 2000 of course includes the development established for 1990.

TABLE I - Columbia Point Development Program

New Development by 1987:

Bayside Expo Center (Expansion)
800-space parking garage
200,000 square feet office and/or exposition space
20,000 square feet retail for Expo Center activities and nearby residential

Public Housing Site
Mixed residential housing - 1400 units
(Of the above, about 400 units are currently occupied. The housing development is expected to have 400 low income, 500 moderate income and 500 market rate units).

Additional New Development by 2000:

Calf Pasture
200-room hotel, assumed for traffic generation purposes
40,000 square feet retail for U-Mass/JFK/State Archives/Hotel or Residential/Expo/Visitors

TABLE II

COLUMBIA POINT REVITALIZATION PROGRAM (1984 Existing)

Traffic Volumes* on Major Project Area Streets and Highway Network

Street	P.M. Peak 4 - 5 P.M.	A.M. Peak 7 - 8 A.M.	AWDT
Southeast Expressway			
Southbound Ramp	480	--	12,650
Northbound Ramp	250	--	5200
Columbia Road			
Eastbound	1050	--	14,134
Westbound	1360	--	15,185
Wm. J. Day Boulevard			
Eastbound	580	--	9333
Westbound	750	--	6824
Wm. J. Day Boulevard Connector			
Northbound	670	--	8978
Wm. J. Day Boulevard Connector			
Southbound	260	--	4233
Mt. Vernon Street			
Westbound	526	--	4529
Morrissey Boulevard Off-ramp			
Northbound	443	--	7955
Old Colony Avenue			
Eastbound	970	--	6953
Westbound	303	--	3226
Morrissey Boulevard @ U-Mass Rd.			
Northbound	930	3678	22,470
Southbound	2994	126	22,057
U-Mass Road			
Westbound	548	178	6648
Morrissey Blvd. @ Freeport St.			
Northbound	814	--	20,955
Southbound	2907	--	29,924
Freeport Street			
Eastbound	564	--	9316
Westbound	447	--	4937

*One-way intersectional approach volumes

II. EXISTING CONDITIONS

STREET AND HIGHWAY NETWORK

Access to Columbia Point is made by various roadways, with the Southeast Expressway being the major highway serving the area. Access ramps from the Expressway to Columbia Road are to the west of Kosciuszko Circle, which connects to Old Colony Boulevard, William J. Day Boulevard and Morrissey Boulevard. Additional Expressway ramps at Freeport Street and Morrissey Boulevard serve major traffic to and from the south. (See Figure 3).

The principal local street that serves the northern portion of the area is Mt. Vernon St. which connects the Bayside Mall to Day Boulevard and Morrissey Boulevard to the west and to the public housing area to the east, ending in a cul-de-sac. Traffic volumes range between 5,000 to 9,000 vehicles per day.

Traffic volumes on the major street highway network in the Columbia Point area for the P.M. peak hour and Average Weekday Traffic (AWDT) are indicated on Table II and Figure 4.

Levels of Service* (LOS) at key intersections within the project's traffic study area and adjacent areas indicated in Table III and Figure 5 range from A at Mt. Vernon Street and Day Boulevard connector to Level of Service F at Morrissey Boulevard and Freeport Street in the generally more critical P.M. (compared to A.M. peak) peak period of 4:00 P.M. to 5:00 P.M. as indicated on Table II.

As a special critical situation, the LOS for U-Mass Roadway and Morrissey Blvd. is shown for the A.M. peak hour.

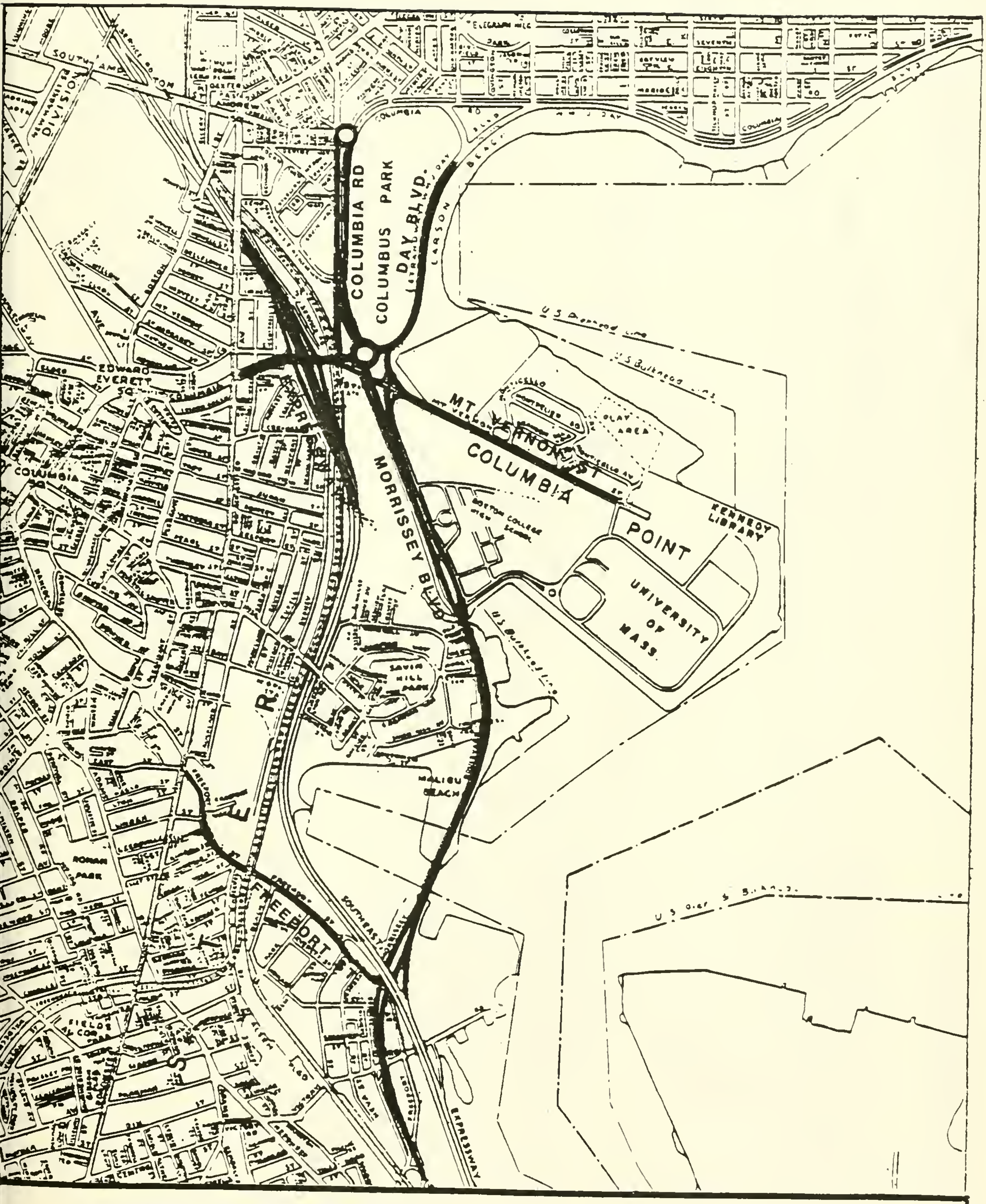
Table III

Levels of Service - Columbia Point Traffic Study Area
(P.M. Peak Hour)

Intersection	Level of Service	
	4:00-5:00 P.M.	7:00-8:00 A.M.
Columbia Rd. - Expressway northbound off-ramp	D	--
Columbia Rd. - Expressway southbound off-ramp	C	--
Wm. J. Day Blvd. - Wm. J. Day Blvd. Connector	D	--
Mt. Vernon St. - Wm. J. Day Blvd. Connector	B	--
Old Colony Blvd. - Morrissey Blvd. southbound on-ramp	A	--
U-Mass - Morrissey Blvd.	B	F
Morrissey Blvd. - Freeport St.	F	--

---

*Levels of Service are based on volume-capacity ratios according to the Highway Capacity Manual (Highway Research Board, 1965). Levels range from A to F, with A representing free-flow traffic and excellent service conditions and F representing forced-flow, stop-and-go traffic and jammed conditions. Urban traffic conditions are considered good if they are at LOS C or better.



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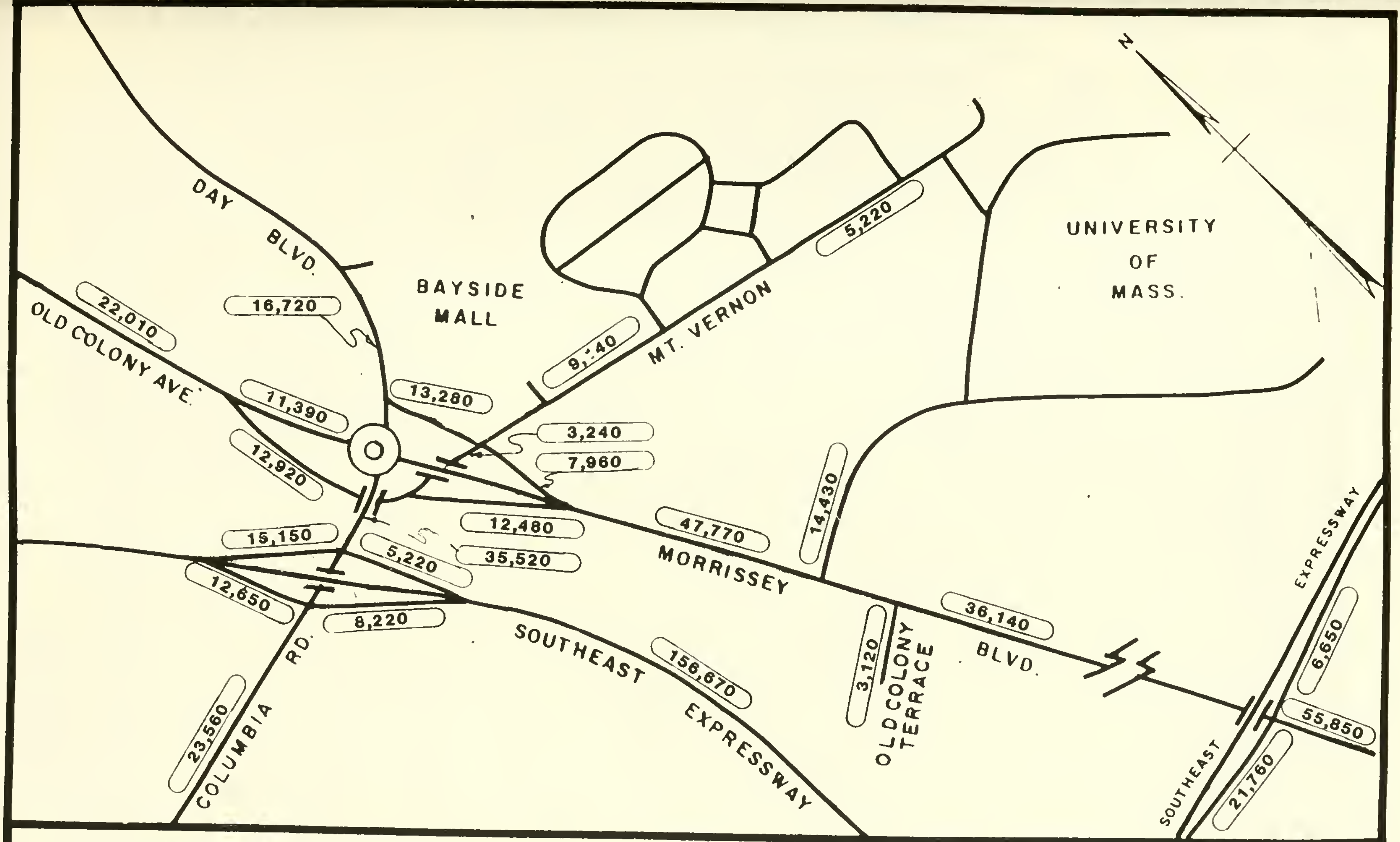
COLUMBIA POINT
TRAFFIC IMPACT AREA

FIGURE 3



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Average Weekday Daily Traffic
1984 Existing

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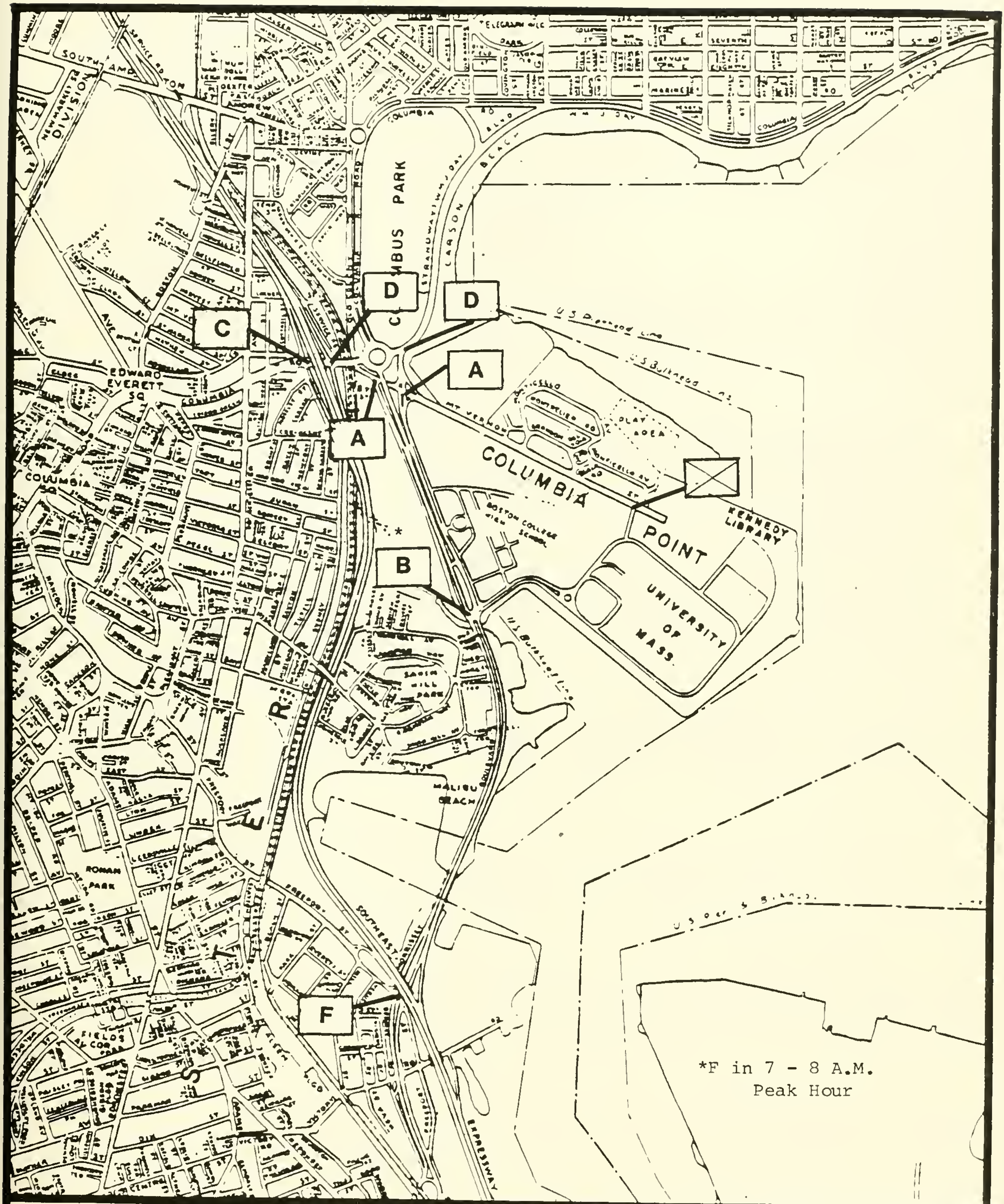
FIGURE 4



*F in 7 - 8 A.M.
Peak Hour

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P.M. Peak Hour Level Of Service
4:00-5:00
1984 Existing

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FIGURE 5

Specific comments on the several major intersections are given below:

Columbia Rd./Expressway Southbound Off-ramp

Currently operating at an LOS of C with signals on flashing operation. This intersection is impacted by high volumes of traffic bound for Dorchester and Morrissey Boulevard Corridor, as well as traffic bound for the northern portion of the Southeast Expressway.

Columbia Rd./Expressway Northbound Off-ramp

This intersection which in connection with the southbound off-ramp is approximately 200 feet apart, with signals on flashing, operates at an LOS of D. Traffic volumes emanate from Kosciuszko Circle and Columbia Road as access to the Southeast Expressway north and south.

Wm. J. Day Blvd./Day Blvd. Connector

Day Blvd. has been in the past and is still regarded as an alternate route to the downtown section of Boston by the motoring public from Morrissey Blvd. The intersection now operates at an LOS of D.

Mt. Vernon St./Day Blvd. Connector

The Mt. Vernon St./Day Blvd. Connection, Morrissey Blvd. northbound off-ramp and Old Colony intersection serves the existing public housing and the Bayside Expo Center. During peak hours it operates at an LOS of A.

Old Colony Ave./Morrissey Blvd. Southbound On-ramp

As an intersection used extensively by the U-Mass shuttle service connecting with the MBTA Red Line and, in addition, used by general traffic as an alternative route to Morrissey Blvd. by-passing Kosciuszko Circle, it currently operates at an LOS of A.

U-Mass Rd./Morrissey Blvd.

The U-Mass /Morrissey Blvd. intersection is an alternative route from the Expressway. The A.M. peak hour operates at an LOS of F, while the evening peak-hour operates at an LOS of B.

Morrissey Blvd./Freeport St.

The Morrissey Blvd./Freeport St. intersection has many problems and operates at an LOS of F during peak hours due to Expressway traffic using Morrissey Blvd. as an alternative route.

NOTE: For comment on Preble Circle (Columbia/Old Colony/Preble) please see page 64.

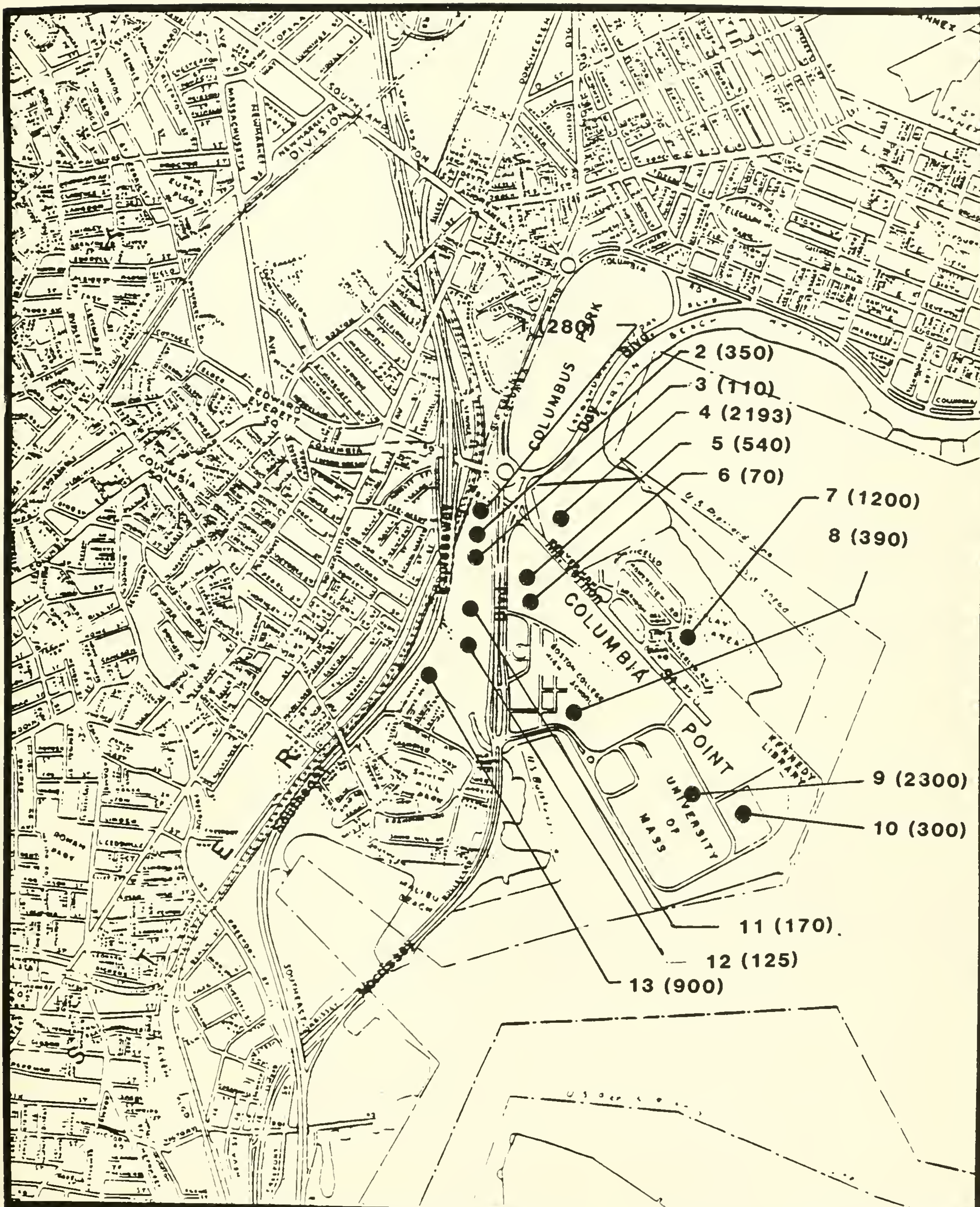
PARKING

Existing travel to Columbia Point is served by the following parking.(see Figure 6):

1.	U-Mass (leased)	280
2.	Girl Town	350
3.	Sperry Corporation	110
4.	Bayside Mall	2193
5.	First National Bank	540
6.	First National Bank	70
7.	Columbia Point Housing	1200
8.	Boston College High	390
9.	U-Mass	2300
10.	Kennedy Library	300
11.	WLVI TV	170
12.	Boston Globe	125
13.	Boston Globe	900

Although the parking spaces for the University of Massachusetts and the established Morrissey Boulevard commercial uses are well utilized, the Columbia Point housing spaces suffer from very low use due to the diminished population. The First National Bank and the Boston Teachers Union park autos on the Bayside Mall site, along with employees and patrons of the recently opened Bayside Exposition Center.

When parking fees are collected (upon entry) at the Bayside Expo Center at peak periods, serious queueing can occur which can back traffic up beyond Kosciuszko Circle. This appears to be a major contributor to congestion caused by Expo Center operations. Overall these situations have not been frequent and have tended to occur, as might be expected by Expo Center attendance peaking characteristics, at times different than regular weekday A.M. and P.M. peak traffic periods.



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Existing Parking

FIGURE 6

PUBLIC TRANSPORTATION

Public transportation serving the Columbia Point area can be grouped into three categories (see Figure 7):

1. Red Line Rail Rapid Transit
2. MBTA Surface Bus
3. U-Mass Shuttle Bus

1. Red Line Rail Rapid Transit

Rail rapid transit is provided to the Columbia Point area by the MBTA's Red Line. Four Red Line tracks pass through the existing JFK/U-Mass Station area providing two types of trips to the Columbia Point area. From the South Shore, patrons must ride the Red Line's Harvard-Braintree train north through JFK/U-Mass Station to Andrew Station and transfer to a southbound Dorchester branch train and ride one stop back to JFK/U-Mass Station. As fro the south, patrons from the north use only Dorchester branch trains to stop at Columbia, as the Braintree trains at present can only pass through Columbia.

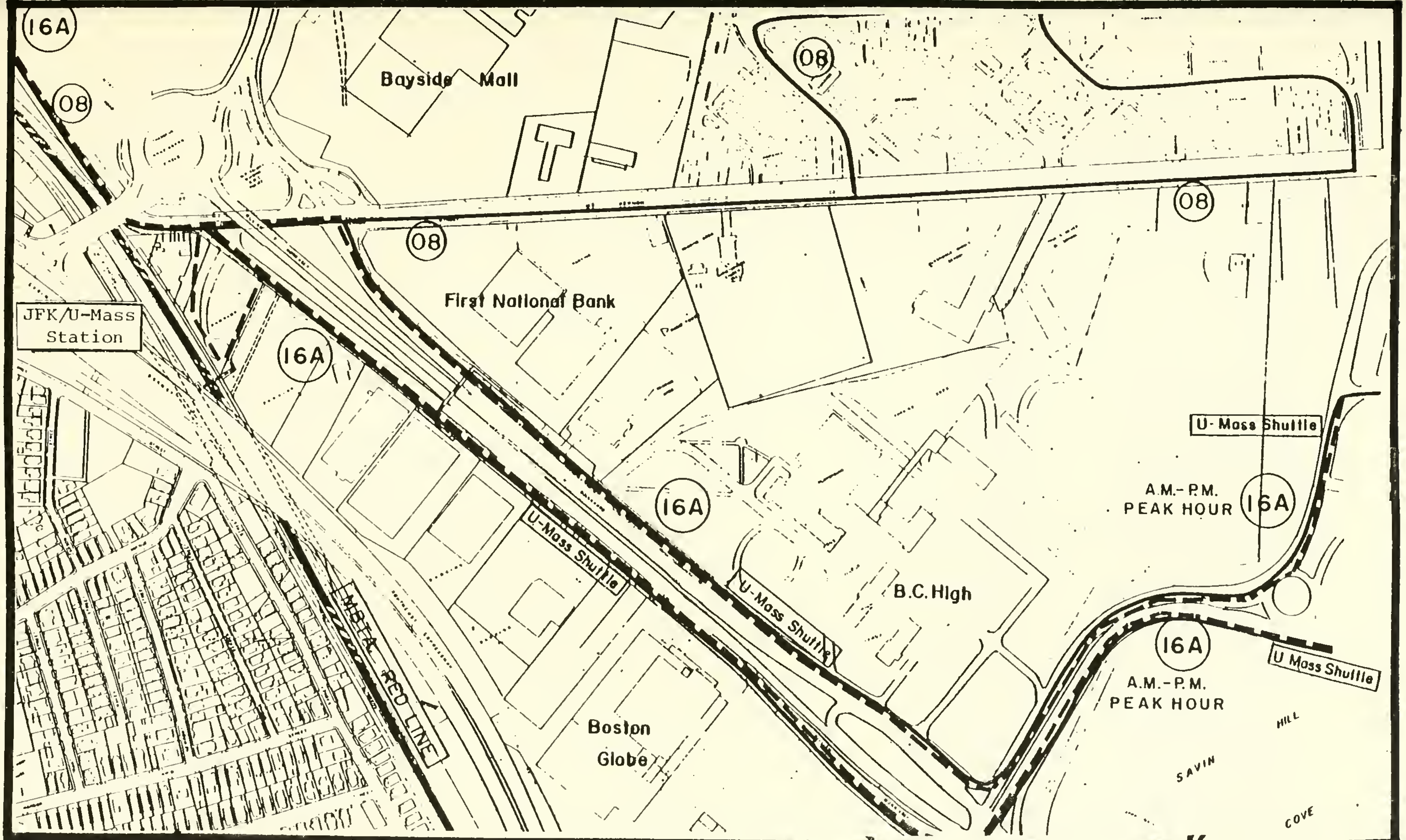
2. MBTA Surface Bus

MBTA bus service is provided by route 08 (Columbia Point to Dudley Station) This route goes directly into Columbia Point via Andrew Station using Mt. Vernon Street with headways of approximately 30 minutes.

Route 16A (Forest Hills - U-Mass) service is provided during morning and evening peak hours, has headway times of approximately 20 minutes, and runs via Morrissey Boulevard - U-Mass Road and returns stopping at Boston Street by Andrew Station.

3. U-Mass Shuttle Bus

U-Mass currently operates its own shuttle service between its harbor campus on the peninsula and the JFK/U-Mass rapid transit station with headways of 2 to 3 minutes during peak periods and 12 minutes on off-peak hours. The hours of operation are 6 A.M. to 10:30 P.M. In addition, there is shuttle service from Downtown Boston (Park Square) via the City Hospital area to th harbor campus. This service has headways of up to 30 minutes. The average daily ridership for the U-Mass shuttle is between 10,000 and 11,000 persons arrivals plus departures, rising to a peak of over 12,000 persons in the fall period, when 12 buses are utilized.



COLUMBIA POINT PENINSULA
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PUBLIC TRANSPORTATION
Existing

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FIGURE 7

PEDESTRIAN CIRCULATION

The major pedestrian approaches to the Columbia Point study area are via Mt. Vernon Street from William J. Day Boulevard, Morrissey Boulevard and Old Colony Avenue. The principal link from JFK/U-Mass Station is Mt. Vernon Street. There is no clearly defined pedestrian link to the area other than a foot-bridge on Morrissey Boulevard that connects commercial uses on Morrissey Boulevard and JFK/U-Mass Station to Boston College High School and the Channel 56 TV facility. Major pedestrian activity occurs at this location during commuter and school access hours.

WATER TRANSPORTATION

There is no commercial/pleasure boat usage around the Columbia Point study area, except for a small dock and mooring area at U-Mass at Savin Hill Cove. Just to the south is the Savin Hill Yacht Club and further to the south on Dorchester Bay Basin inside of Morrissey Boulevard is the Dorchester Yacht Club.

III. PROPOSED TRANSPORTATION IMPROVEMENTS

Street System Deficiencies and Areas for Improvement

In assessing existing and possible future conditions at Columbia Point, particularly in the northern section being redeveloped, three areas for street improvements were identified. The selected improvements to address these conditions are described later in this chapter and alternatives considered are summarized in the following chapter. The deficient areas are:

I. Mt. Vernon Street Connection to Columbia Road via Day Boulevard - To travel from the Southeast Expressway to Mt. Vernon Street requires routing from off-ramps along Columbia Road to Kosciuzsko Circle, a very short section of Day Boulevard and an awkward turn into a connector from Day Boulevard to Mt. Vernon Street. The reverse movement is similar except that the left-turn from the Day Boulevard Connector towards Kosciuszko Circle is even more troublesome than the corresponding entering right turn.

This major entrance to the northern area of Columbia Point is not only "illegible", but has capacity deficiencies. The configuration also encourages the use of Day Boulevard (and L and Summer Streets) through South Boston by traffic destined for the Boston downtown area, wishing to by-pass expressway congestion.

II. Connection of Mt. Vernon Street with U-Mass Roadway - At present, Mt. Vernon Street is a dead-end street, without connections to the U-Mass // Kennedy Library roadway complex. This means that there is no vehicular access from the northern part of the peninsula to U-Mass or the U-Mass link to Morrissey Boulevard nor vice versa. For a greater functional and perceptual integration of the Columbia Point peninsula, as well as increased circulation options, the interconnection of these streets is proposed.

III. Mt. Vernon Street Reconstruction - The present Mt. Vernon Street has an 80-foot right-of-way with 7-foot sidewalks and a 66-foot (outer curb to outer curb) roadway, divided in certain sections by a 6-foot median. The scale of this roadway beyond the Expo Center is excessive for the existing and projected future traffic volumes, particularly when wider sidewalks and landscaping would greatly enhance the functioning and appearance of the immediate area. A new roadway configuration is proposed which will hopefully accomplish these purposes.

The selection of improvement schemes to help improve these deficient areas was tempered by costs and funding, availability of land, effect on adjacent parcels and traffic impacts, as presented in the next chapter. The improvements proposed for implementation are described in the following sections.

PROPOSED ROADWAY CHANGES

After consideration of needs, resources and impacts, the following three improvement elements are proposed to address the three deficiency areas noted above: (see Figure 8 for overall configuration).

(1) Day Boulevard Connector - Two alternatives for the treatment of this connector are proposed. One, designated "A", is preferred by BRA and others, while "B" is proposed by the MDC. The major difference is that "A" retains the connector as a two-way link, while "B" eliminates the connector direction from Mt. Vernon Street to Day Boulevard.

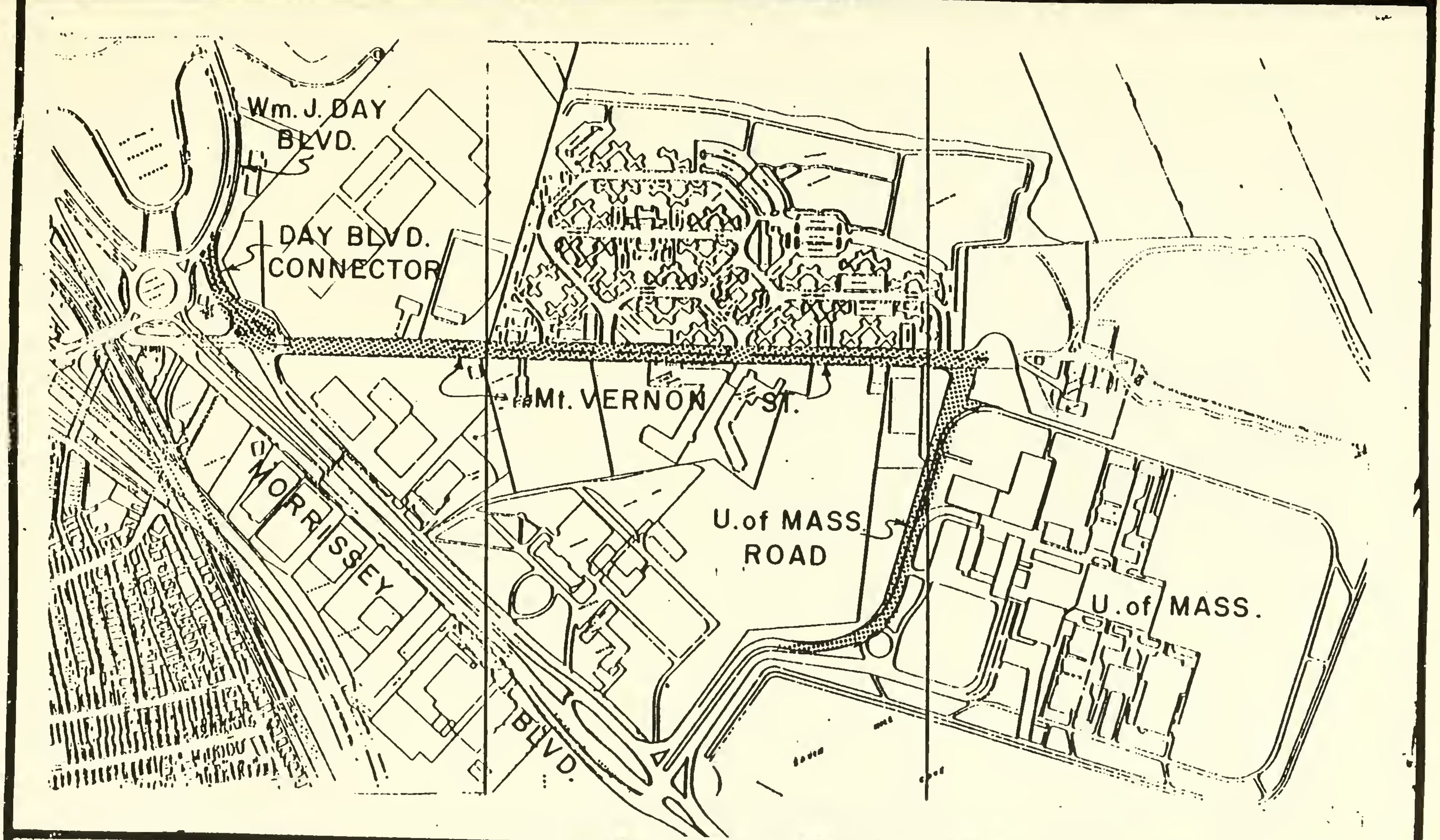
Both are shown in Figure 9 with the connector direction in question indicated. While "A" retains both directions, a re-channelization and offsetting of the Morrissey Boulevard northbound off-ramp forces traffic to turn left or right, eliminating the Kosciuszko Circle by-pass via the Day Boulevard Connector. "B" forces all traffic from Mt. Vernon Street to Day Boulevard or the Circle and beyond to route via Old Colony Boulevard.

Changes at the Day Boulevard end of the connector involve relatively minor adjustments in channelization, signs, signals and pavement markings.

Construction costs for the connector and associated intersection work are in the range of $200,000 to $350,000 with "B" being the most expensive.

(2) U-Mass Roadway Linkages - The proposed interconnection of the northern and southern portions of Columbia Point via a short two-way connector between the U-Mass one-way Roadway loop and Mt. Vernon Street is shown in Figure 10.

Right-of-way is required for the new connector and the cost of construction would not likely exceed $200,000.



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PROPOSED STREET IMPROVEMENT LIMITS

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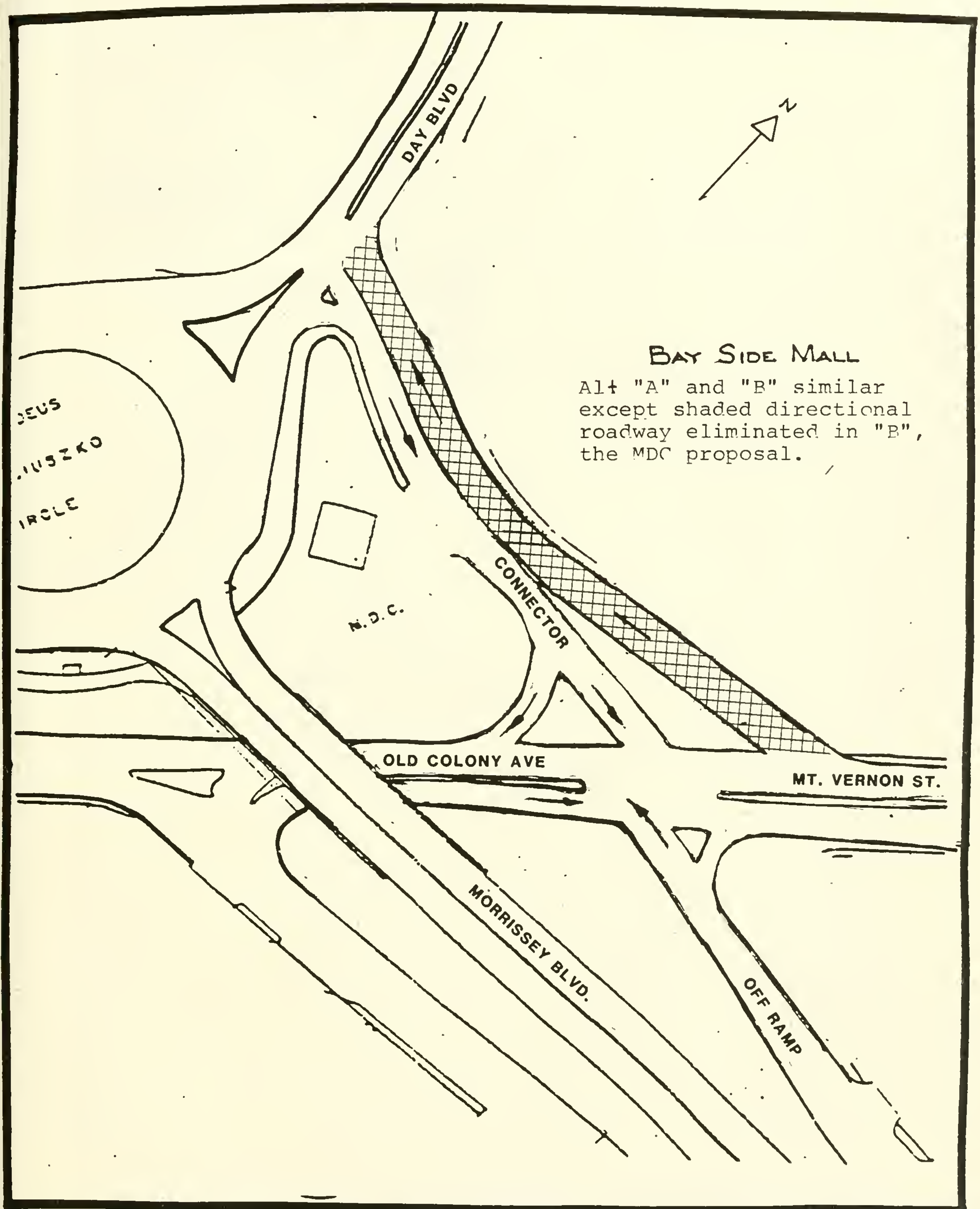
FIGURE 8

(3) Mt. Vernon Street Reconstruction - The cross-section of proposed Mt. Vernon Street, allowing for landscaping and widened sidewalks is shown in Figure 16. Non-roadway area is evenly divided on each side of the roadway and the raised median has been eliminated except on the westerly (Expo Center) end of the road where roadway geometry has been shaped for Expo Center access and higher traffic volumes. The cost of this reconstruction is $1,600,000 (including Mt. Vernon Street extension).

Once implemented, the roadway changes, with total construction cost estimated at $2,150,000, will result in improved circulation where either access route, Mt. Vernon Street or U-Mass Roadway, may be used by all peninsula development, according to location on the Point or outside destination, or both. Mt. Vernon Street will be more in scale with its function as a major local street and pedestrian route, and will enhance the adjacent area through appropriate landscaping.

Jurisdiction Issues

The streets in the area come under the control of three different agencies, the Metropolitan District Commission (Morrissey Boulevard, Day Boulevard, Columbia Road, etc.), City of Boston (Mt. Vernon Street, etc.) and the University of Massachusetts. Much coordination work must be done among the agencies prior to and during engineering and implementation. It may prove desirable to have the status of certain roadways changed as well as the "care, control and custody" arrangements. One option might be having one of the three agencies, possibly MDC, assume jurisdiction over the future Columbia Point public way system, but the current consensus is to implement improvements cooperatively, maintaining current roadway ownership. As the development of the peninsula proceeds, common jurisdiction arrangements may become more desirable.



Alt "A" and "B" similar except shaded directional roadway eliminated in "B", the MDC proposal.

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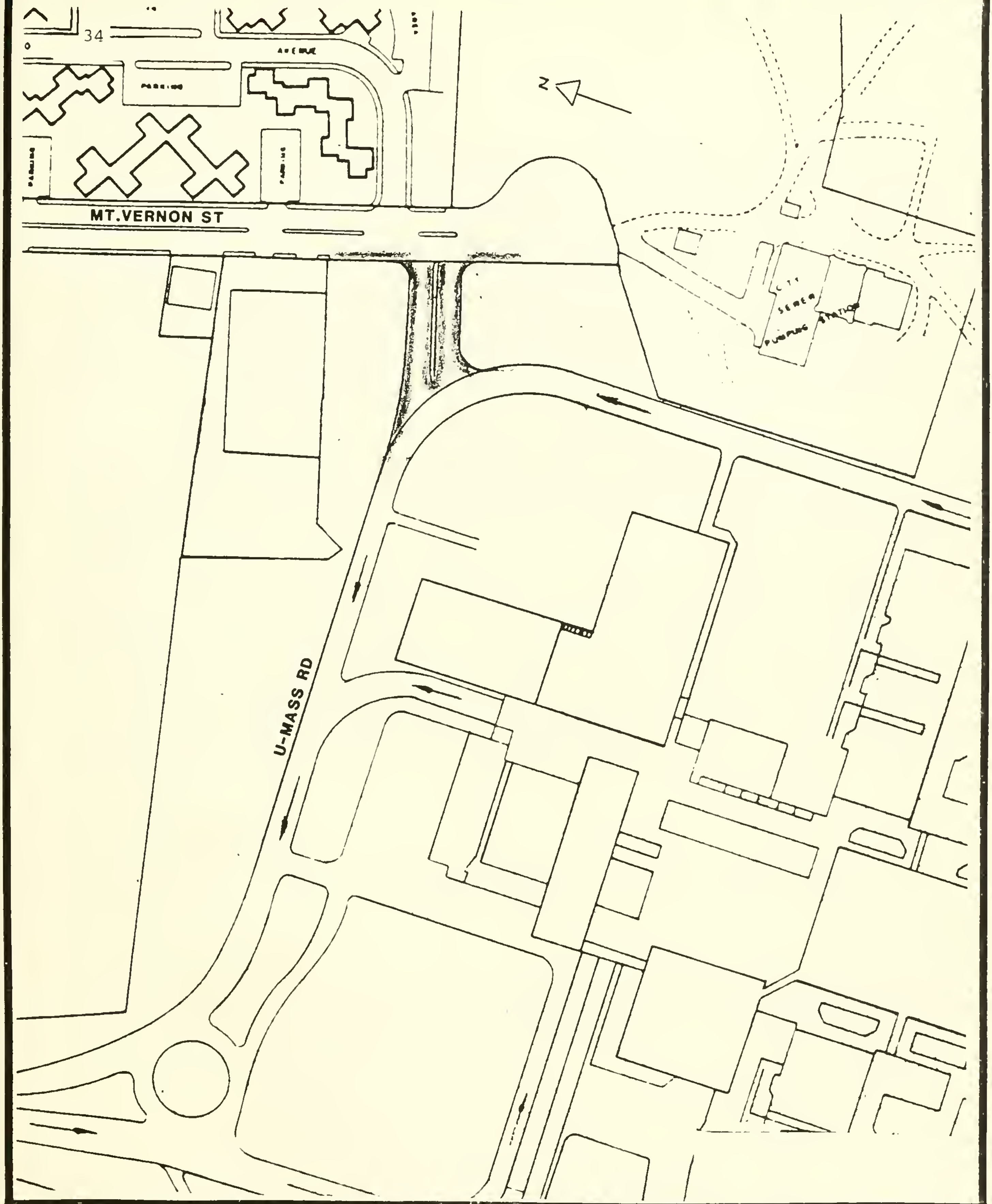
DAT DAY BLVD CONNECTOR
Alternatives "A" & "B"

FIGURE 9



COLUMBIA POINT PENINSULA
REVITALIZATION PROGRAM

Short Connector to Existing
U-Mass Roadway

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FIGURE 10

FUTURE OF PUBLIC TRANSPORTATION

Red Line Improvements

The public transportation improvements that are proposed for Columbia Point involve the MBTA Red Line service at JFK/U-Mass Station. The station is to be rebuilt to allow Braintree trains to stop at an additional platform integrated with Dorchester branch service. This will result in a doubling of service for patrons from the north and eliminate a transfer and backtracking from the South Shore. The components of the new station are: a new platform (440 feet long); a new pedestrian bridge; a new bus transfer lobby; a new station lobby over the South Shore tracks and alterations to the existing station lobby over the Dorchester branch tracks; the installation of approximately 1400 feet of track with connections to the existing platform; 6 handicapped parking spaces; landscaping and signage for the new station. The bus loop and auto drop-off will be designed to better serve access to trains.

Effects of other Transportation Elements - Transit, Boats, Parking

The impacts of actions in other transportation components can generally be regarded as positive and as mitigating to areas of congestion on the roadway network.

Specific public transportation improvements on the Red Line at JFK/U-Mass Station, and more generally as in the opening of the South Quincy Station and Alewife extension, will help to attract more riders away from automobiles. It is not expected that any increased transit ridership will overtax the carrying capacity of an efficiently-operated Red Line. In this regard, there are long-range plans to permit the operation of six-car trains on the Red Line. For direct connection to all future Columbia Point activities, a revised and improved shuttle bus service will be necessary. The MBTA will also evaluate the need for any revision of bus schedules and routings to maintain proper access from areas not served by rapid transit.

MBTA Surface Bus Routes

Routes 08 and 16 buses will continue to operate, and any increases in service will be contingent on further study by MBTA for future demand in ridership.

Shuttle Bus

The U-Mass shuttle bus will continue to operate between the hours of 6:00 A.M. and 10:30 P.M. and will benefit from the proposed new bus loop at JFK/U-Mass Station. A new or revised shuttle service to accommodate the new development must be seriously considered.

FUTURE PARKING SUPPLY

Existing and future travel for the Columbia Point study area will be served by nearly 6,000 parking spaces. Although the parking spaces for U-Mass, Kennedy Library and the established Morrissey Boulevard commercial uses are well utilized, it is not envisioned that a drastic increase in parking will be needed at this time. However, future plans responding to a large increase in patrons attending the Exposition Center as well as possible retail and commercial activity in the vicinity could point to a structured parking facility.

Parking, as it is now assessed, will match the demands of the new development. The Exposition Center has adopted the parking of the former Bayside Mall and will consider the building of an additional parking garage if needs dictate. Housing plans envision parking sufficient for residents needs at a minimum of one space per dwelling.* It is important that parking be monitored as a shortfall, or poor management can lead to wanton on-street parking where traffic could be impeded or where adjacent neighborhoods could be adversely affected.

PEDESTRIAN PATTERNS AND VOLUMES

The Columbia Point development will generate a considerable volume of pedestrian traffic which can be broken down into several components. Among these components are:

1) Persons employed by the Expo Center, U-Mass or other peninsula activity sites who will live in Columbia Point housing and who will walk to work.

2) Persons who come to the various employment or commercial activity centers by any other mode of transportation but walk to the Expo Center or other activity on the peninsula.

3) Persons who disembark from JFK/U-Mass Red Line Station and walk to any Columbia Point destination.

Pedestrian flows in the Columbia Point area are focussed on Mt. Vernon Street as a spine. This pattern is expected to continue after completion of proposed improvements. Persons who walk to work are expected to prefer the northerly side of Mt. Vernon Street from the housing area. Others who use public transportation and walk from the Red Line Station at JFK/U-Mass would use Old Colony Avenue to connect with Mt. Vernon Street.

The Columbia Point development proposals will provide for pedestrian circulation improvements. Besides widened sidewalks along peripheral streets, major traffic-free walkways are proposed within the housing development and along the shoreline. The roadway improvements will include new sidewalks, lighting, crosswalks and traffic signal controls. The increase in activity in the area should also lead to less isolated walking circumstances with a resultant increase in security. See Figure 11.

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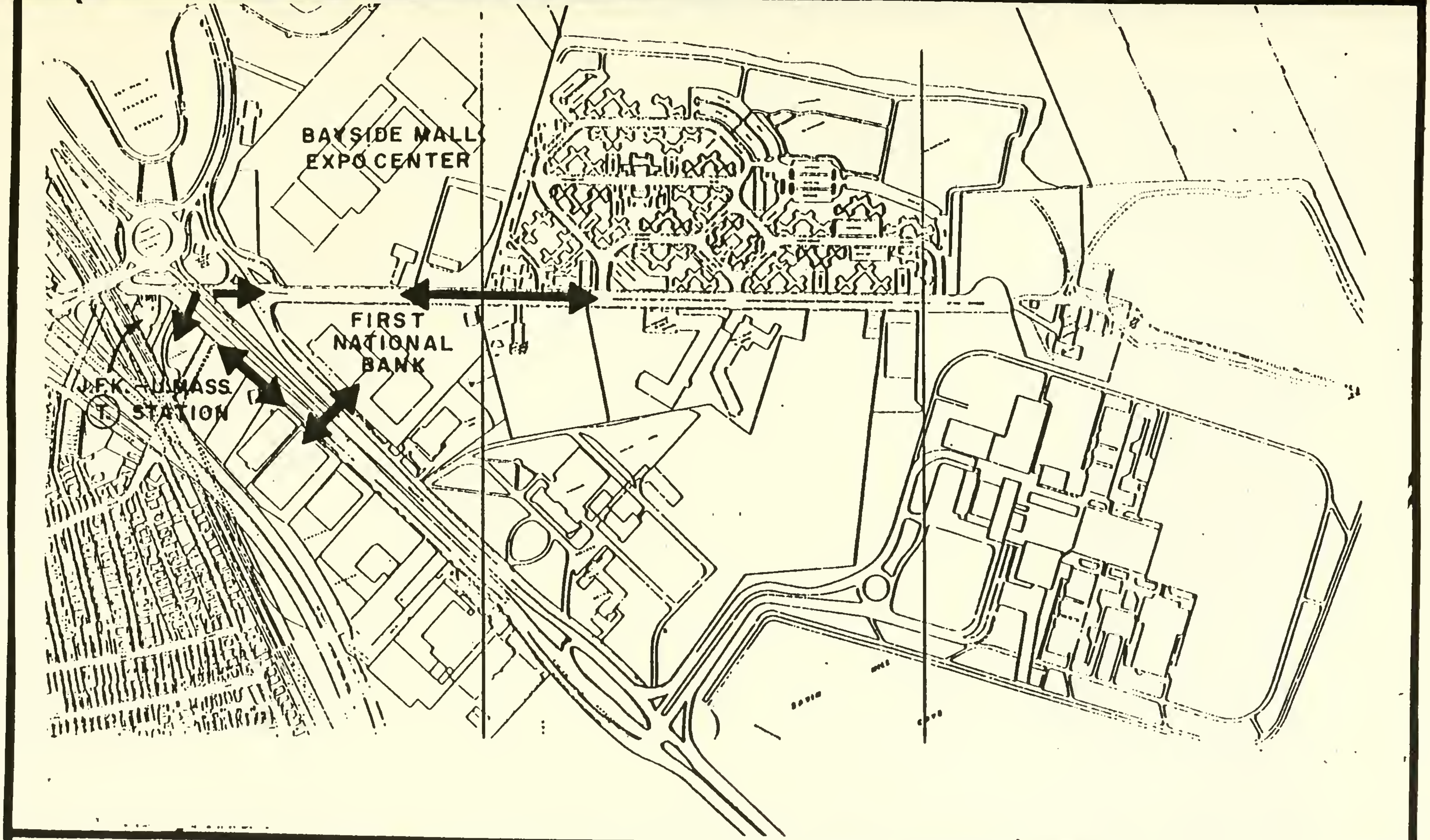
*A minimum of one space per dwelling off-street, with on-street space available for visitors.



COLUMBIA POINT PENINSULA
REVVITALIZATION PROGRAM

DIRECTIONAL DISTRIBUTION OF
PEDESTRIANS TO AND FROM
COLUMBIA POINT

boston redevelopment authority
transportation planning department

FIGURE 11

BOAT USAGE AND SERVICE

The final component of the Columbia Point Revitalization Program is expected to include a new boat marina and a possible water taxi that would be used to link up the various peninsula land uses with various activity centers in the Downtown area of Boston Harbor. Due to the need for dredging and physical improvements to the shoreline, not yet programmed, boat service is still in the preliminary planning stage. The Kennedy Library has recently expressed interest in the establishment of boat service.

In like manner, the institution of boat service to Columbia Point can only help reduce the reliance of residents, patrons, visitors, students and employees on car access. In this case, the type of boat and frequency of service should match the demand generated.

IV. ALTERNATIVES CONSIDERED

In attempting to meet street circulation deficiencies, as presented in the last chapter, a number of alternative roadway changes were considered, ranging from "no-build" to schemes of varying scale and geometrical layout. This chapter will describe the types of alternatives considered, from which the proposed roadway changes were selected.

The three locational areas of concern, Mt. Vernon Street Connector to Day Boulevard, interconnection with U-Mass roadways, and Mt. Vernon Street reconstruction, were generally viewed independently in the formulation of alternatives. Each area improvement would benefit circulation on its own to an extent somewhat independently of the other two areas. None of the three locational area improvements is an effective substitute for any other.

CONSTRAINTS AFFECTING THE SELECTION OF ALTERNATIVES

In devising alternatives and choosing a preferred course of action, a number of constraints or considerations came into play which, in balance, led to the proposed improvements described in the last chapter. These constraints may be highlighted as follows:

- Cost - Cost was a factor on two counts, absolute and cost with respect to benefits obtained. Absolute cost is related to the amount of funds which could be made available for the work contemplated. At worst, the total cost of street improvements proposed in this report should not exceed the UDAG allocation of $2.1 million. Other funding sources might be available, but have not yet been identified. Cost/benefit relationships were assessed subjectively for the amount of street improvement obtained for level of cost.

- Transportation Impacts - Assessment of these involved traffic volumes and capacity, effect on pedestrian paths, access and circulation patterns, impact on parking needs and whether or not the solution of one problem created another.

- Land Takings - Any scheme requiring land takings could present a number of problems. The disruption of existing or proposed land uses on existing land parcels is of prime importance, with related taking costs to any roadway project adding significantly to total implementation costs.

  Where park or public open space land is involved in takings, as would be the case under certain Columbia Point roadway alternatives, an additional requirement of concurrence by the legislature is required, posing a more complicated process. When parkland is taken, it is generally expected that it be more than replaced with new parkland by the project involved.

- Compatibility with Surrounding Land Uses - Several potential issues belong in this category ranging from street appearance and urban design features to the undesirability of heavy traffic volumes adjacent to residential land uses. Street appearance is a common unifying element for surrounding property and can add much to, or detract from, the image of an area. Appearance can be positively affected by landscaping, good street lighting, appropriate special paving, etc.

- Security and Emergency Access - Changes in circulation can either enhance or damage the ability of emergency (police, fire, ambulance) vehicles to gain access. Also, the security of an area can be affected if (institutional) sections within control points are opened to general public access. Conversely, the removal of general traffic from public park areas could lessen security if greater isolation results.

The above considerations led to a reduction of a number of possible schemes to a proposed course of action, with one alternate, as outlined below. The no-build option must of course be retained as a possible outcome and as a point of comparison.

ALTERNATIVE SCHEMES BY LOCATIONAL AREA

The different schemes were devised by locational area and any area element was for the most part combinable with any element from the other two areas. The different options within each area are described below:

A. Mt. Vernon Street Connection to Day Boulevard

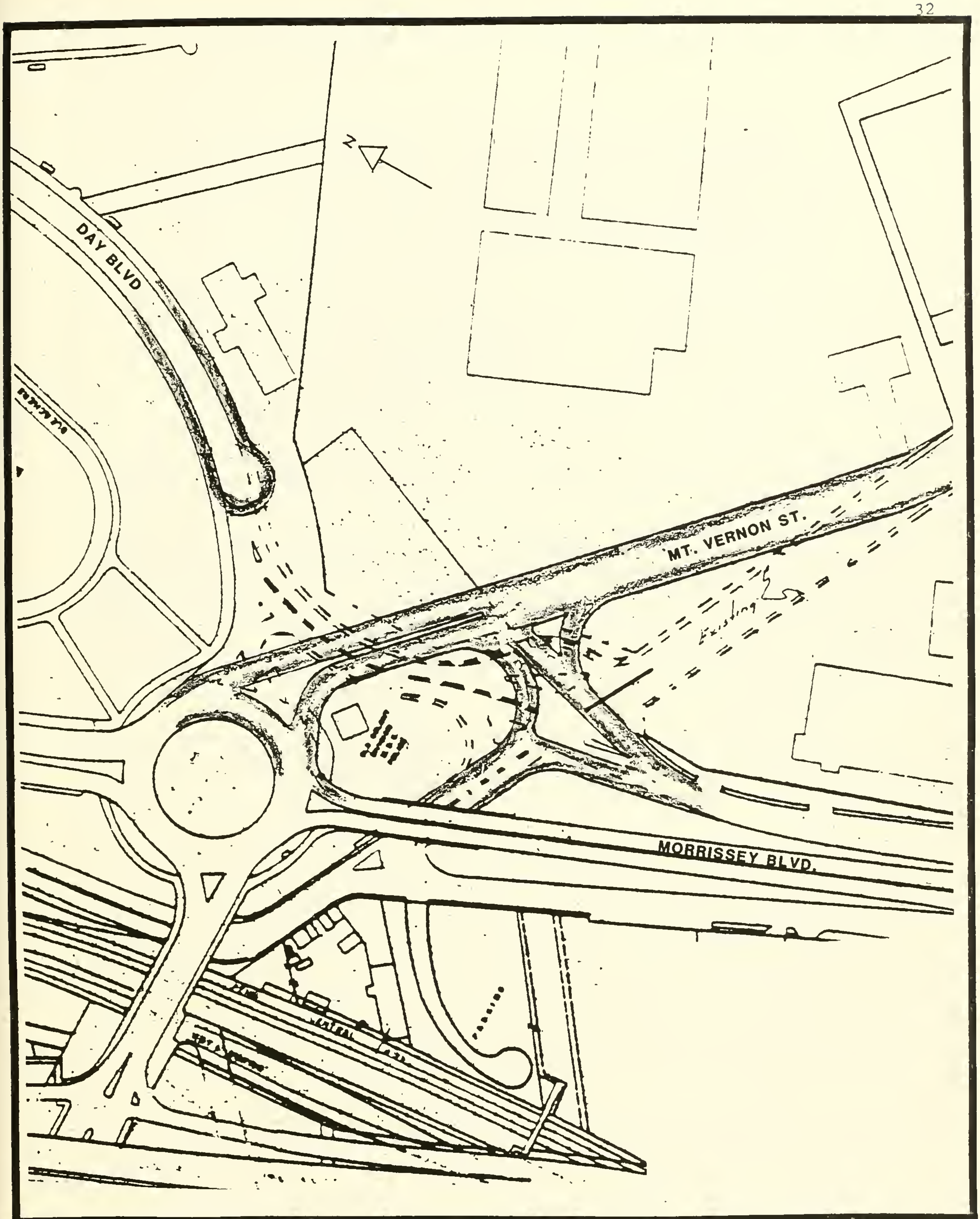
At the present time Mt. Vernon Street is the one major street serving the northern part of Columbia Point -- the Expo Center, housing development and Calf Pasture area. It connects to Columbia Road and the Expressway via a connector to Day Boulevard. Day Boulevard leads either to South Boston to the north or immediately to Kosciuszko Circle and Columbia Road. Mt. Vernon Street also leads to Kosciuszko Circle via two underpasses and Old Colony Boulevard.

A number of schemes were considered for eliminating the closeness of the Day Boulevard connector to Kosciuszko Circle and the skew angle the connector makes with Day Boulevard. A major rearrangement and reconstruction of the Circle and related roadways was eliminated as being beyond the cost capabilities of the current roadway project. In addition, it was made known that some important community values were attached to the Circle and its memorial, and disturbance of it would be of concern.

The most fundamental approach taken to better align the connection was to disconnect Day Boulevard from Kosciuszko Circle and realign Mt. Vernon Street directly into the Circle in its stead as shown schematically in Figure 12. Day Boulevard would cease to be a through-street but would serve only adjacent land between the Expo Center and Columbia Road to the north (Columbus Park, Carson Beach, etc.) Several options exist in the method used to cut-off or "localize" Day Boulevard, such as a cul-de-sac on either end, two cul-de-sacs in the mid-section, and partial elimination with absorption into Columbus Park/ Carson Beach.

The major advantages of this kind of alternative are:

- Much improved connection of the peninsula to Kosciuszko Circle,
- Elimination of through-traffic on a key section of Day Boulevard with the prospect of reducing regional traffic using L Street and Summer Street to approach downtown.
- Possibility of adding existing roadway area to parkland.
- Easier pedestrian travel between Columbus Park and Carson Beach.
- Moderately low cost.



COLUMBIA POINT PENINSULA
REVITALIZATION PROGRAM

Disconnect Day Blvd. from
Kosciuszko Circle and realign
Mt. Vernon St.

boston redevelopment authority
transportation planning department

FIGURE 12

The disadvantages include:

- Although much existing Day Boulevard through-traffic might be diverted to the Expressway or elsewhere, the main recipient would likely be Old Colony Avenue between Columbus Park and the Ellen McCormack public housing development. Conceivably a significant portion of diverted Day Boulevard traffic might simply reroute to Day Boulevard beyond Preble Circle. Day Boulevard now carries almost 17,000 vehicles per average weekday while Old Colony handles around 22,000.
- The realignment of Mt. Vernon Street would require a portion of the Bayside Expo Center parking area and interfere with the Center functioning and some expansion plans.
- The elimination of through-traffic from Day Boulevard along Carson Beach could detract from the security of the area by removing a form of public surveillance.

It was decided to reject a Mt. Vernon Street direct link to Kosciuszko Circle, chiefly on the problem of diverting additional traffic to Old Colony Avenue between the housing and the park.

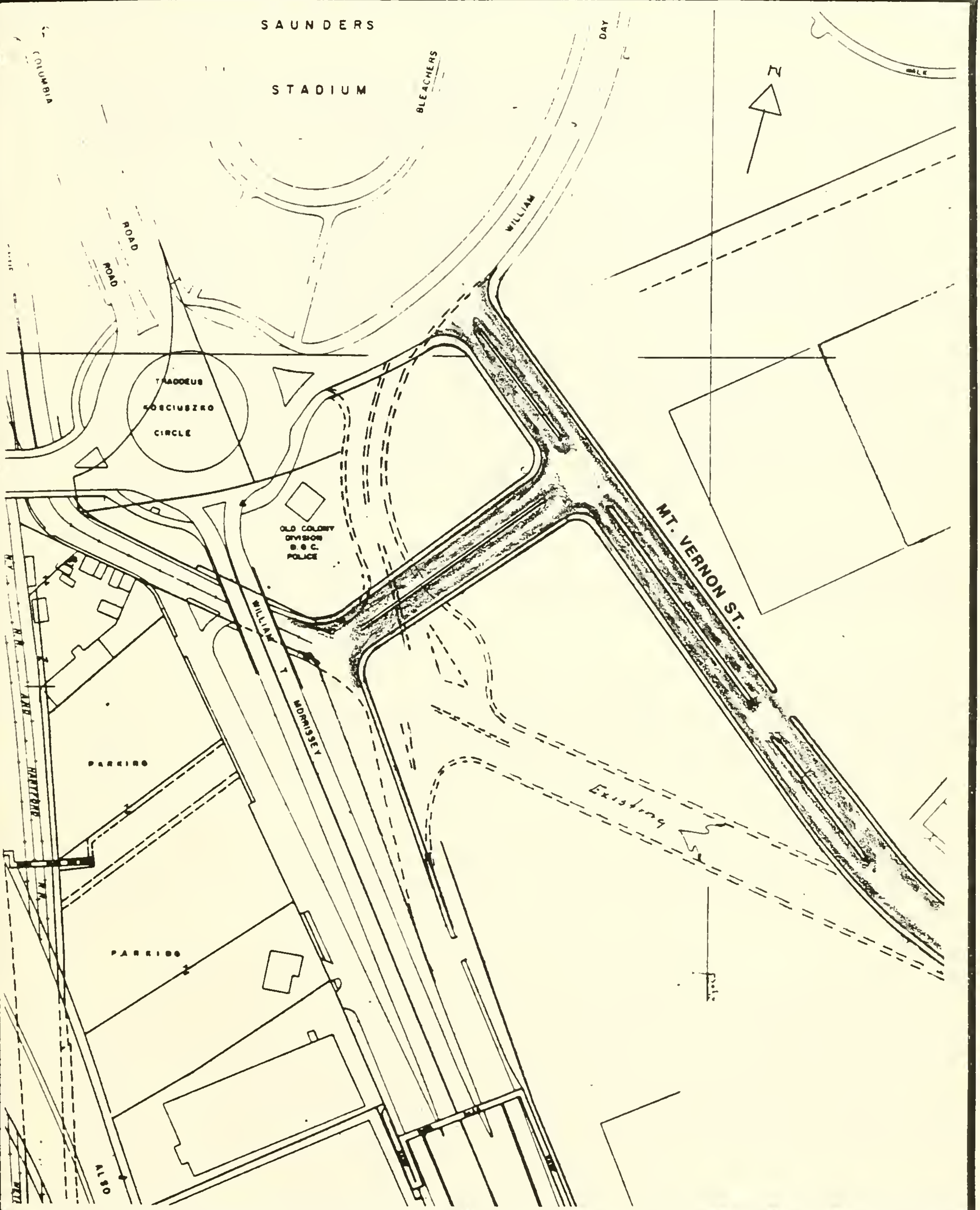
Another type scheme for improving the Mt. Vernon Street connector was simply to realign it to be more distant from the Circle and to present less of a skew angle. Such a realignment must occur across the Expo Center parking area as shown in Figure 13, which represents a moderate version of this kind of scheme. Although this type of improvement appeared initially promising, it was decided to reject it on the basis of disruption to the Expo Center parking and expansion plans, coupled with a judgement that the traffic benefits gained beyond operational improvements to the existing connector were not significant.

The proposed improvements for the Mt. Vernon Street connector focussed on two alternatives of operational level adjustments, as presented in the last chapter. The value gained with available resources, judged against negative by-products, led to this conclusion. (See Figure 9).

B. Interconnection of Mt. Vernon Street with U-Mass Roadways

At present, U-Mass, the Kennedy Library and State Archives can only use the U-Mass roadways leading from Morrissey Boulevard for vehicular access. Conversely, the northern section of Columbia Point - the Expo Center, housing development, Calf Pasture area, etc. are limited to Mt. Vernon Street and its links to Kosciuszko Circle roads and Morrissey Boulevard/Old Colony Avenue. It would be desirable to interconnect the two subsystems -- Mt. Vernon Street and U-Mass roadways so that the various activity centers would have the option of using either peninsula "gateway", and to make driving from one center to the other (e.g. U-Mass to Expo Center) possible without exiting and re-entering the Point via Morrissey Boulevard. Bus circulation options would also be enhanced.

The interconnection would not only serve a functional role, but would be viewed as a continuous facility which helps create the perception that the peninsula is a unified community, rather than two separately functioning sub-areas.



COLUMBIA POINT PENINSULA REVITALIZATION PROGRAM

Realign Mt. Vernon St.
more distant from
Kosciuszko Circle

boston redevelopment authority
transportation planning department

FIGURE 13

To accomplish the interconnection, the simplest alternative was to link the roads together by a short two-way street section connecting the existing U-Mass /JFK Library (one-way) loop, as shown in Figure 10. For southbound travel the connection is direct, but for northbound, all traffic is routed around the JFK Library loop.

It was considered highly desirable to create a continuous two-way street with the main U-Mass roadway and Mt. Vernon Street, with a two-way link to the State Archives and the Kennedy Library. This would yield the most direct and legible travel patterns and could allow more localized treatment of the existing one-way loop adjacent to U-Mass. The sizable traffic volumes from U-Mass parking would, however, be subjected to a greater level of traffic control. A basic scheme for this is shown in Figure 14.

In creating such a two-way street facility inter-connecting the peninsula, several options were considered, varying principally in scale, geometry and property required. A scheme which provided an expansive divided roadway somewhat similar to the existing U-Mass roadway approaches to Morrissey Boulevard is shown in Figure 15. This was rejected on the grounds that it was excessive in physical and functional scale, presenting an "open highway" style of design, that the property damages were significant and that the construction costs would be relatively high.

The proposed link as described in the last chapter and shown in Figure 10, is composed of a modest scale short two-way street section connecting the existing U-Mass/JFK Library (one-way) loop, in keeping with the existing layout and U-Mass parking access.

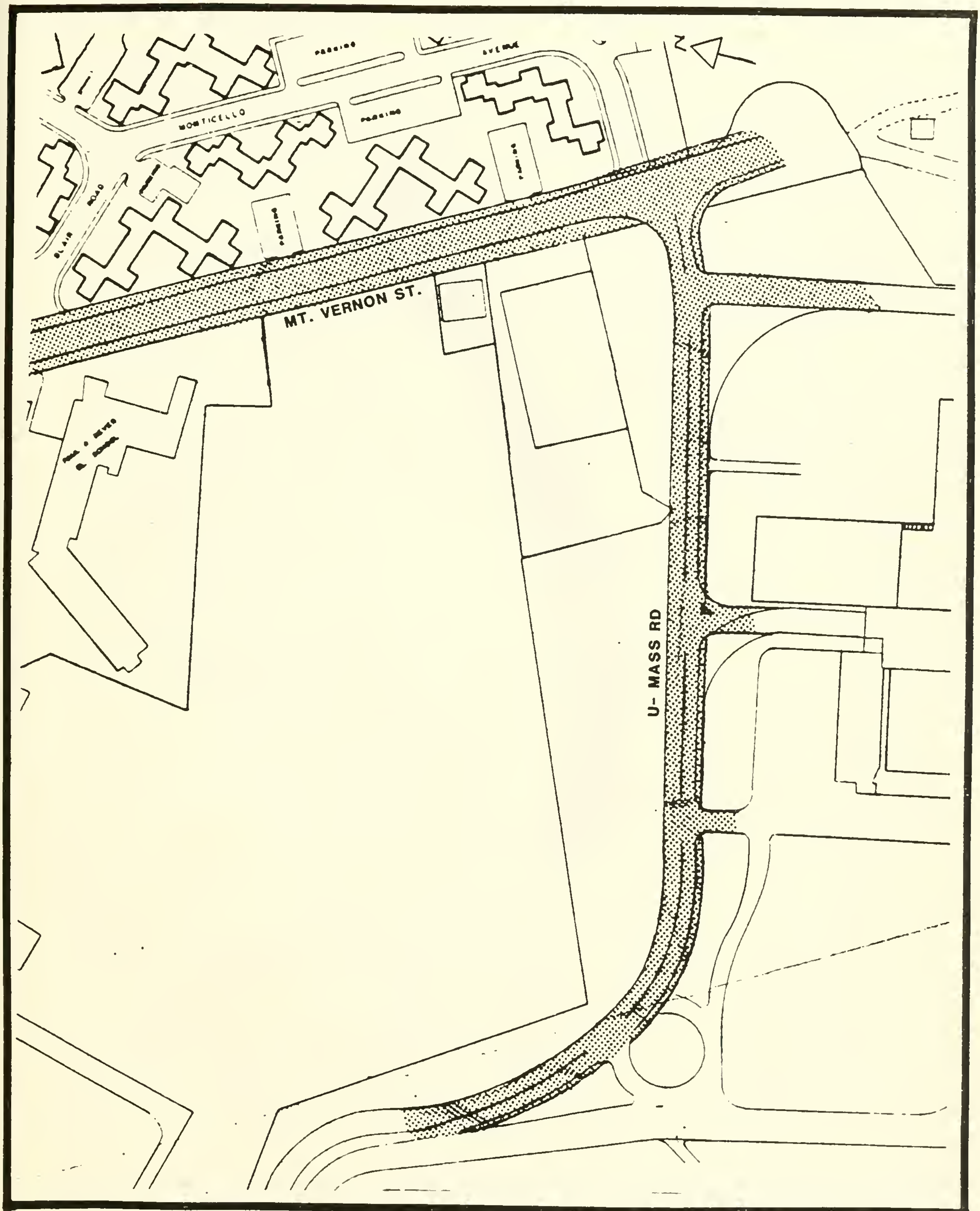
C. Mt. Vernon Street Reconstruction

The various alternatives considered for Mt. Vernon Street reconstruction all involved a desire to scale down the existing excessive roadway width to provide additional sidewalk width, landscaping and other amenities. The variable elements included a determination of roadway widths functionally required and where non-roadway widths should be located -- how much sidewalk area on each side and whether or not some width should be allocated to a median strip.

Figure 16 shows samples of roadway crossections considered. After some deliberation, it was decided to adopt the existing right-of-way with equal sidewalk widths on either side, without a median strip, as described previously, also shown in Figure 16. An (interim) turnaround is provided on the easterly end.

D. Long-range Connections to JFK, Calf Pasture Area

As noted elsewhere, it is desirable to have a two-way connection to the JFK Library and State Archives from the Mt. Vernon Street/U-Mass roadway facility. The location of this could be similar to the current one-way outbound link, a new alignment still south of the Calf Pasture pumping station or a new location north of the station (see Figure 17). Since in the long-run this connection will serve and subdivide the Calf Pasture area development possibilities, additional land use planning will be highly desirable before deciding upon any long-range alternative here. The proposed project does not propose any permanent solutions for this link, nor any interim construction.

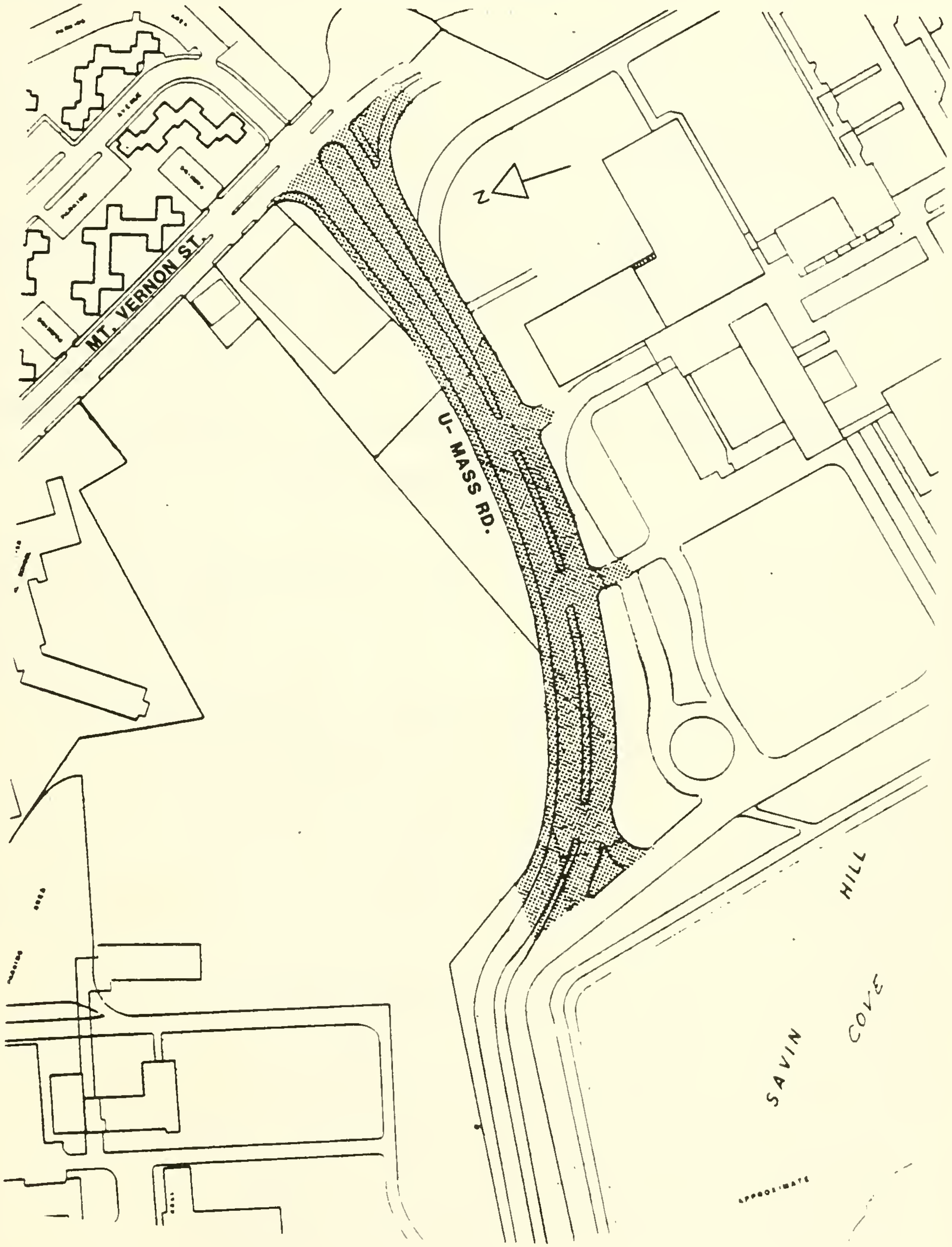


COLUMBIA POINT PENINSULA REVITALIZATION PROGRAM

boston redevelopment authority
transportation planning department

Four-lane undivided
U-Mass Roadway

FIGURE 14

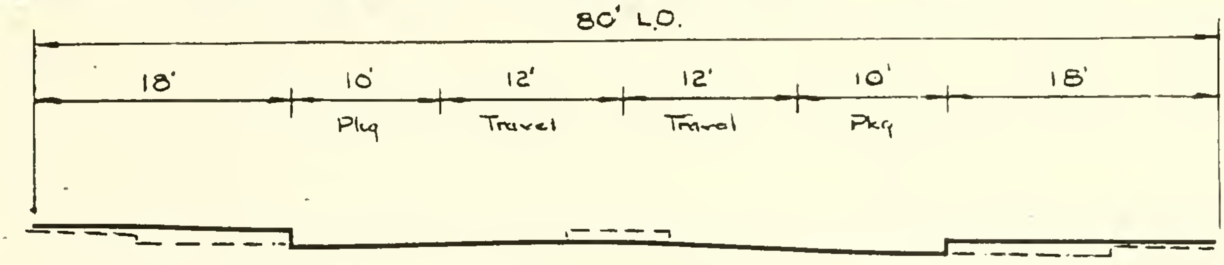


COLUMBIA POINT PENINSULA REVITALIZATION PROGRAM

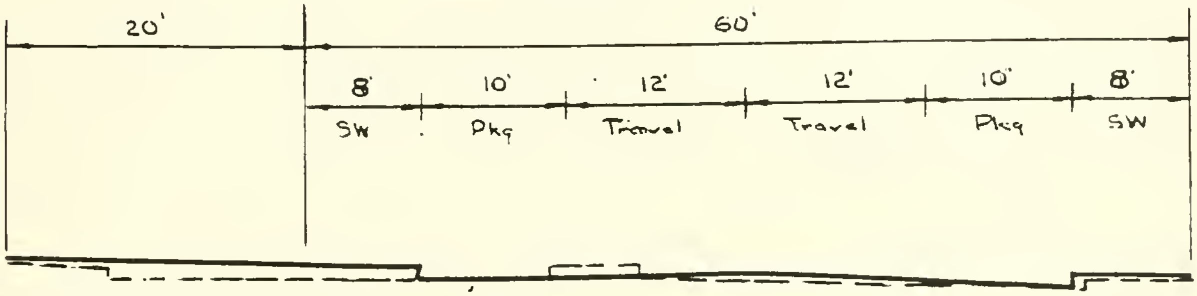
Expansive divided U-Mass Roadway

boston redevelopment authority
transportation planning department

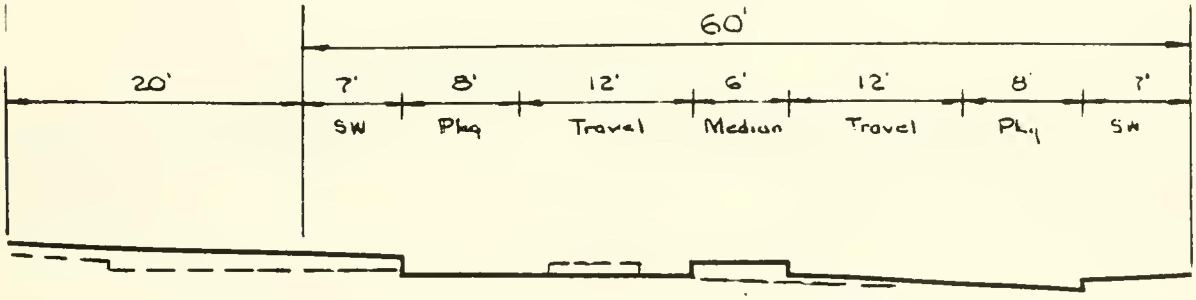
FIGURE 15



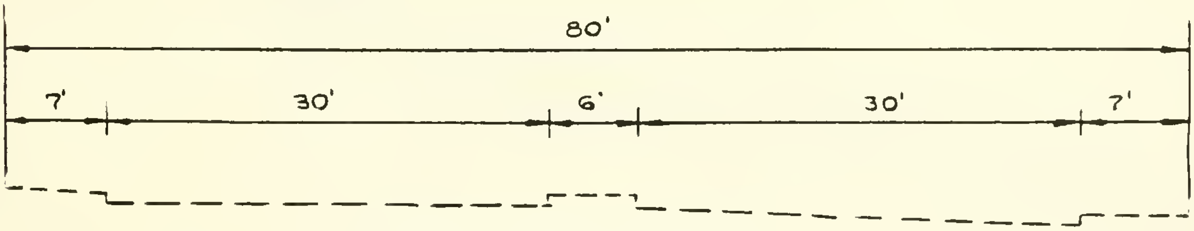
PROPOSED



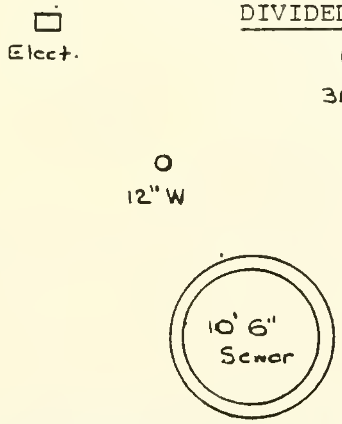
OFFSET ROADWAY ALTERNATIVE



OFFSET ROADWAY WITH MEDIAN ALTERNATIVE



DIVIDED ROADWAY EXISTING

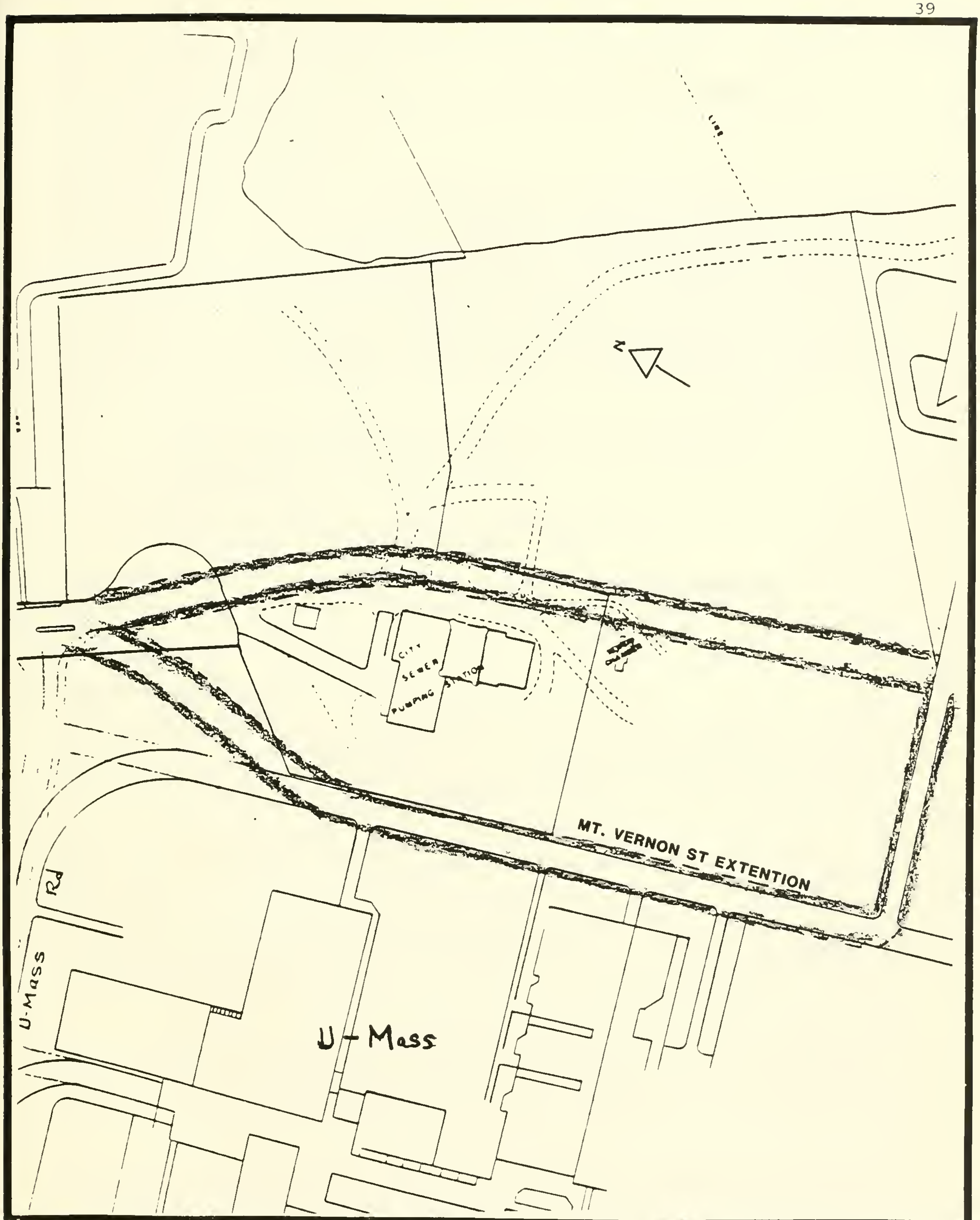


COLUMBIA POINT PENINSULA
REVITALIZATION PROGRAM

Roadway Crossections considered
for Mt. Vernon St.

boston redevelopment authority
transportation planning department

FIGURE 16



COLUMBIA POINT PENINSULA REVITALIZATION PROGRAM

Long-range Connections to JFK, Calf Pasture Area

boston redevelopment authority
transportation planning department

FIGURE 17

V. ESTIMATE OF FUTURE TRAFFIC AND LEVELS OF SERVICE

TRAFFIC PROJECTION METHODOLOGY

Future travel generated by the proposed Columbia Point development was estimated by taking the proposed development program and applying suitable travel generation rates for all activities involved and obtaining person and vehicular travel which is assigned to available transportation facilities. The development generated travel is added to traffic levels which allow for some growth in existing levels, which would occur apart from the proposed development. In this report, we have increased general traffic by 1.0% per year from the base year (1984) to the future year when improvements are expected to be completed (2000). The estimation process, which is typical for development travel predictions, includes the following steps:

- Person trip generation, by employee and non-employee
- Peak/off-peak period distribution
- Modal split
- Vehicle occupancy rates
- Trip destribution to approach corridors
- Trip assignment to transportation facilities

These steps, as applied to the Columbia Point development program for various periods in a typical day, are set forth in a number of tables and are discussed below.

PERSON TRIP GENERATION

The proposed Columbia Point development consists of several components as set forth in the Introduction and noted again in Table IV. The major new traffic generation is the Phase I 1000 additional housing units, which when combined with the existing 400, yield a future residential community of 1400 units.

The office and retail/commercial generation rates were based on findings of the 1972 Wilbur Smith & Associates Access Oriented Parking Strategy report.

The generation rates for retail/commercial could overstate the actual trip generation, as it is expected that many of the customers would be captive to the major land uses. Since it was judged that the retail/commercial in Phase I would be more greatly associated with the Expo Center, the generation rate was arbitrarily reduced by about 15% compared to Phase II (15.3 vs. 18.3 person arrivals per weekday).

The office rates of 7.3 person arrivals/day each way reflects the average of the study's sample of major office buildings in the Boston area. As a comparison, the Institute of Transportation Engineers (ITE) has determined that trip generation rates for office buildings range from 2 to 22 vehicle arrivals per 1,000 square feet per day with an average of 5.8 vehicles.

For multi-unit residential developments, the ITE study showed that vehicle trip arrival rates ranged from 0.3 to 6.2 per unit per day in the buildings surveyed. A value of 4.8 person arrivals is used in this study.

The hotel generation rates of 4.6 per room were based on the Copley Place Transportation Impacts Study of 1980 and the North Station EIR, 1983. This compares with a vehicular arrival range of 4.6 to 6.7 in the ITE reference.

PEAK/OFF-PEAK PERIOD DISTRIBUTION

Within the typical daily travel, it is necessary to establish travel variations, in particular the peak and off-peak hours of access and egress, relative to the operation of transportation facilities serving the development. To do this, the way the development operates with respect to various schedules must be assessed.

The percentages of average daily trips taking place during morning and evening land development peak hours as well as a mid-day off-peak hour (1:00-2:00 P.M.) are shown in Table VI by employee and non-employee and by activity. The office space is assumed to be open from "9 to 5" with the employees coming and going chiefly during the morning and evening traffic peak hours, with customers spread out during the day. The coincidence of the employee peak hour with the general traffic peak hour would slightly exagerate volumes, as the general peak hours occur from 7:30 to 8:30 A.M. and from 3:30 to 4:30 P.M. Residential trip making is highly oriented to the regular commuting peak hours, morning and evening.

Tables VI and VII indicate that the estimated development peak hour of person travel occurs from 4 P.M. to 5 P.M., amounting to about 1473 person arrivals and departures or just over 9.0% of the 16,436 daily person "ins and outs".

Employee/Non-Employee Distribution

Employees and non-employees (i.e. residents, hotel guests, office visitors, shoppers, etc.) travel at different times, stay for different lengths of time, and may come by different modes. Accordingly, they are distinguished in this analysis. The data in Table VIII are based on estimates of the numbers of employees expected to work at Columbia Point computed as follows:

- 1 employee per 360 square feet of retail space
- 1 employee per 210 square feet of office space
- 1 employee per hotel room
- 1 employee per 11 residential units

Table V presents the proportion of person trips by employees and non-employees by land use and a summary of daily person trips to be generated by the Columbia Point development.

TABLE IV

COLUMBIA POINT AVERAGE WEEKDAY PERSON TRIP GENERATION

1990 Phase I

	Development Program	Arrival Rates Per Day	Daily Person Arrivals
Retail/Commercial	20,000 sq. ft.	15.3 per 1,000 sq. ft.	306
Office	200,000 sq. ft.	7.3 per 1,000 sq. ft.	1460
Residential	1000 units	4.8 per unit	4800
		Sub Total	6566

2000 Phase II

Retail/Commercial	40,000 sq. ft.	18.3 per 1,000 sq. ft.	732
Hotel	200 rooms	4.6 per room	920
		Sub Total	1652
		TOTAL	8218

NOTE:

Total Addition Development Person "Arrivals and Departures" = 8218 x 2 = 16,436

TABLE V

EMPLOYEE/NON-EMPLOYEE PERSON TRIPS

	% of Trips	1990 Phase I	2000 Phase II
Retail/Commercial			
Employee	20%	61	-
Non-Employee	80%	245	-
Office			
Employee	66%	964	-
Non-Employee	34%	496	-
Residential			
Employee	2%	96	-
Non-Employee	98%	4704	-
Retail/Commercial			
Employee	15%	-	110
Non-Employee	85%	-	622
Hotel			
Employee	24%	-	221
Non-Employee	76%	-	699
Total Employees		1121	331
Total Non-Employees		5445	1321
TOTAL		6566	1652

TABLE VI

PERCENTAGE OF DAILY TRIPS DURING PEAK HOURS AND PRIME OFF-PEAK HOURS

	Phase I Activities					
	Arrive			Depart		
	8-9 A.M.	Off-Peak*	4-5 P.M.	8-9 A.M.	Off-Peak*	4-5 P.M.
Retail/Commercial						
Employee	10	12	10	0	12	20
Non-Employee	0	10	5	0	10	20
Office						
Employee	55	2	0	0	2	55
Non-Employee	10	15	0	0	15	10
Residential						
Employee	25	5	5	5	5	25
Non-Employee	0	5	22*	22*	5	0
	Phase II Activities					
Retail/Commercial						
Employee	55	0	0	0	0	55
Non-Employee	0	15	5	0	15	15
Hotel						
Employee	5	5	0	0	5	5
Non-Employee	7	8	3	3	8	7

*Off-Peak is intented to be respresentative of mid-day (1:00 - 2:00 P.M.) traffic.

(Revised from January, 1983 report values of 55%, which are related to employment trip attractions, not residential trip production, and were eroneously used).

TABLE VII

PEAK HOUR AND OFF-PEAK HOUR PERSON TRIPS

Phase I

	Arrive			Depart		
	8-9 A.M.	Off-Peak	4-5 P.M.	8-9 A.M.	Off-Peak	4-5 P.M.
Retail/Commercial						
Employee	6	7	6	0	7	12
Non-Employee	0	25	13	0	25	50
Office						
Employee	530	19	0	0	19	530
Non-Employee	50	74	0	0	74	50
Residential						
Employee	24	5	5	5	5	24
Non-Employee	0	235	1034	1034	235	0
Total Employees	560	31	11	5	31	566
Non-Employees	50	334	1047	1034	334	100
Sub Total	610	365	1058	1039	365	666
Phase II						
Retail/Commercial						
Employee	61	0	0	0	0	61
Non-Employee	0	93	31	0	93	93
Hotel						
Employee	11	11	0	0	11	11
Non-Employee	49	56	21	21	56	49
Total Employees	72	11	0	0	11	72
Non-Employees	49	149	52	21	149	142
Sub Total	121	160	52	21	160	214
GRAND TOTAL	731	525	1110	1060	525	880

NOTE:

Total Additional Development Person "Arrivals and Departures" in 4 to 5 P.M. Peak Hour = 1084 + 389 = 1473

MODAL SPLIT

In order to assess the demands placed on the various portions of the total transportation system, it is necessary to convert person trips into those travelling by various modes - auto, public transportation or other.

In terms of modal choice, Columbia Point represents an area that is intermediate between a downtown location and one in the suburbs. In downtown, an average modal split is in the range of 30% automobile and 70% non-auto. A suburban location is for all practical purposes 100% auto, with minor exceptions. In keeping with the intermediate nature of Columbia Point, with a downtown and transit proximity, moderately high transit usage is anticipated, supported by expected Red Line improvements.

For housing-generated trips, it was estimated that residents (non-employee) would travel 40% by car, 50% by transit and 10% by foot, with the corresponding values for housing employees being 50%, 40% and 10% respectively. Office employee uses would be 36% auto, 54% transit and 10% by foot, while retail/commercial uses would be 50%, 40% and 10% respectively, reflecting the higher office employee tendency to utilize transit.

The results of the modal split calculations for year 1990 and year 2000 are presented in Table VIII. Of the total 8,218 daily person arrivals, it can be seen that 4,099 persons arrive by auto, with the remainder by transit or walking.

TABLE VIII

MODAL SPLIT

Phase I

	Percentages			Daily Persons		
	Auto	Transit	Walk	Auto	Transit	Walk
Retail/Commercial						
Employee	50	40	10	31	24	6
Non-Employee	70	30	0	172	73	0
Office						
Employee	36	54	15	347	521	96
Non-Employee	45	40	10	223	199	74
Residential						
Employee	40	50	10	38	48	10
Non-Employee	50	40	10	2352	1881	471
Total Employees	-	-	-	416	593	112
Non-Employees	-	-	-	2747	2153	545
Sub Total				3163	2746	657

Phase II

	Percentages			Daily Persons		
	Auto	Transit	Walk	Auto	Transit	Walk
Retail/Commercial						
Employee	50	40	10	55	44	11
Non-Employee	70	30	0	435	187	0
Hotel						
Employee	12	73	15	27	161	33
Non-Employee	60	25	15	419	175	105
Total Employees	-	-	-	82	205	44
Total Non-Employees	-	-	-	854	362	105
Sub Total				936	567	149
GRAND TOTAL				4099	3313	806

TRIP DISTRIBUTION TO APPROACH CORRIDORS

The development travel includes the total Boston urbanized area and beyond so that trips generated will come from all the various transportation corridors. In assessing the distribution of travel, the following division of origins was used (based on Program for Mass Transportation — April 1977):

Origin Corridor or Area	Percent Origins
Downtown Core Area/South Boston	17
Northeast	9
North	15
Northwest	14
West	16
Southwest	12
Southeast	17
Total	100

For distribution of these cars onto access roadways serving the development, the origin corridor proportions were assigned to facilities as follows:

Roadway	% Traffic Assigned
I-93/Southeast Expressway North	43
Old Colony Boulevard	10
Day Boulevard	10
Columbia Road	12
I-93/Southeast Expressway South:	
Freeport Street Ramp to Morrissey Boulevard	20
Columbia Road Ramp	5
	100

TRIP ASSIGNMENT TO THE TRANSPORTATION SYSTEM - PERSONS AND VEHICLES

To establish the number of cars utilized for access, it was necessary to convert auto person trips to autos, via vehicle occupancy factors as shown below.

	Vehicle Occupancy (persons per car)
Residential	
Employee	1.3
Non-Employee	1.1
Office	
Employee	1.5
Non-Employee	1.1
Retail/Commercial	
Employee	1.3
Non-Employee	1.9
Hotel	
Employee	1.3
Non-Employee	1.4

The results of applying vehicle occupancy rates to the daily auto person arrivals of Table VIII are shown in Table IX for years 1987 and 2000. Peak-hour vehicular traffic was estimated by relevant daily trip categories of Table IX by the corresponding peak-hour percentages of Table VI, and is shown in Table X. The daily and peak-hour traffic generated by the new development was allocated to the roadway network according to the proportions set forth above and also shown later in Figure 18. Detailed assignment to reflect circulation changes are discussed below.

Traffic Assignments for Alternatives "A" and "B"

Alternatives "A" and "B" both limit the usage of the Day Boulevard Connector from Mt. Vernon Street, changing the existing traffic pattern with the expectation of reducing traffic demand on Day Boulevard. Decisions had therefore to be made on the changes in traffic routings which would be associated with Day Boulevard Connector modifications.

In Alternative A, the circulation change is simply an off-setting of the northbound off-ramp from Morrissey Boulevard at Mt. Vernon Street such that traffic from this ramp could no longer pass straight through as a bypass to Day Boulevard (via the Connector), but would have to either turn left to Old Colony Avenue or right on Mt. Vernon to the peninsula, or reroute directly to Kosciuszko Circle and Day Boulevard or other legs to the rotary.

The most probable reaction to the change in Connector access for current straight-through vehicles from Morrissey would be to continue directly to the Circle, with the alternative left-turns into Old Colony Avenue being a close second choice. After turning left, vehicles would travel via Old Colony to return via Columbia Road (north leg) to the circle or continue in the intown direction along Columbia/ Old Colony.

For the sake of worst case analysis, all current straight-through traffic on the Morrissey northbound ramp to Mt. Vernon was converted into left-turns into Old Colony. This would place the greatest traffic stress on the Columbia Point "gateway" intersections at Mt. Vernon and the Connector and at Old Colony and Morrissey Boulevard southbound on-ramp, including vehicular access to the JFK/U-Mass transit station.

Alternative B is similar to Alternative A, except that the Mt. Vernon Street to Day Boulevard direction of the Connector is completely eliminated, giving Columbia Point generated traffic no choice except to continue on Old Colony Avenue to go either via the Columbia Road (north) leg to Kosciuszko Circle or intown via Columbia/ Old Colony. The current straight-through traffic on the northbound Morrissey ramp to Mt. Vernon is retained as left-turns as in Alternative A, as a worst case scenario.

TABLE IX

AVERAGE WEEKDAY DAILY VEHICULAR ARRIVALS

	Auto Persons	Vehicles	Auto Persons	Vehicles		
	1990	1990	2000	2000		
Retail/Commercial						
Employee	31	24	-	-		
Non-Employee	172	90	-	-		
Office						
Employee	347	231	-	-		
Non-Employee	223	203	-	-		
Residential						
Employee	38	29	-	-		
Non-Employee	2352	2138	-	-		
Retail/Commercial						
Employee	-	-	55	39		
Non-Employee	-	-	435	395		
Hotel						
Employee	-	-	27	21		
Non-Employee	-	-	419	299		
Total Employees		284		60		
Non-Employees		2431		694		
TOTAL		2715		754	=	3469 Vehicles

TABLE X

PEAK HOUR VEHICULAR TRAFFIC

	Arrive			Depart		
	8-9 A.M.	Off-Peak	4-5 P.M.	8-9 A.M.	Off-Peak	4-5 P.M.
Phase I						
Retail/Commercial						
Employee	2	3	2	0	3	4
Non-Employee	0	9	5	0	9	18
Office						
Employee	127	5	0	0	5	127
Non-Employee	20	30	0	0	30	20
Residential						
Employee	7	2	2	2	2	7
Non-Employee	0	107	470*	470*	107	0
Total Employees	136	10	4	2	10	138
Non-Employees	20	146	475	470	146	38
Sub Total	156	156	479	472	156	176
Phase II						
Retail/Commercial						
Employee	21	0	0	0	0	21
Non-Employee	0	59	20	0	59	59
Hotel						
Employee	1	1	0	0	1	1
Non-Employee	21	24	9	9	24	7
Total Employees	22	1	0	0	1	22
Non-Employees	21	83	29	9	83	66
Sub Total	43	84	29	9	84	88
GRAND TOTAL	199	240	508	481	240	264

*See note under Table VI

Public Transportation

For distribution of public transportation trips to the various facilities the corresponding proportions were estimated for the 3313 person arrivals.

Public Transportation Facility	Percentage of Person Trips
Red Line - Northbound Direction* Ashmont and Braintree Branch	60
Red Line - Ashmont Branch* Southbound	15
Red Line - Braintree Branch* Southbound	15
Crosstown/Dorchester Buses	10
Total	100

*plus shuttle bus service

TRUCK AND TAXI TRAFFIC

Trucks and taxis are not explicitly addressed in this report, but are included in the counts and projections presented. The proportion of either vehicle in the total stream would be very low. Trucks would, of course, make higher demands on roadway capacity than cars, but the truck content on the adjacent Metropolitan District roadways is composed of local access trucks only (about 15 per day in 1980), as through-trucks are prohibited. The actual percentage of trucks would be well under 5%. Taxis are the same as private cars relative to capacity (or less of an impediment, judging from some taxi drivers).

There are about 50 trucks in and out during the set-up and breakdown period of a typical show at the Bayside Mall. These trucks utilize 8 loading docks that are located on the northerly side of the building. Since set-up and breakdown occur before and after a show, there is ample off-street truck storage/staging area on the parking lot.

PARKING DEMAND

The projection of future auto traffic generated by the development allows an approximate estimate of associated parking demand. For Phase I, 284 vehicular arrivals are predicted for employees while 2430 are estimated for non-employees. Allowing one space for every employee for 284 spaces and assuming ½ the non-employees can be present at peak accumulation, for 1215 spaces, Phase I would require nearly 1500 spaces.

After Phase I, the residential component of 1400 units, it is envisioned that one space per unit would, at the minimum, be provided, yielding 1400 spaces.

TRAFFIC VOLUMES ON THE ROADWAY NETWORK

Future traffic volumes on actual roadways serving the Columbia Point area have been estimated by adding site-generated traffic for Phases I and II development, as determined above, to general traffic. General traffic was estimated by increasing 1984 existing volumes by a uniform growth factor of 1.0% per year for each future analysis year (1990 and 2000).

The results of the traffic assignment process, as discussed earlier, are shown in a number of exhibits. First, Figure 18 shows the percentages of site-generated traffic that are assigned to selected roadways. Total volumes on each link, including both site-generated and general traffic are also shown for an average weekday in Figures 19 and 21 for 1990 and 2000.

To give a measure of what contribution the new development makes to total traffic, the site-generated average daily traffic is shown in Figures 20 and 22 on selected roadway links as a percentage of total traffic for 1990 and 2000. As would be expected, this percentage decreases to rather low values with increasing distance from Columbia Point. Although this feature is shown for Alternative "A", Alternative "B" would be similar.

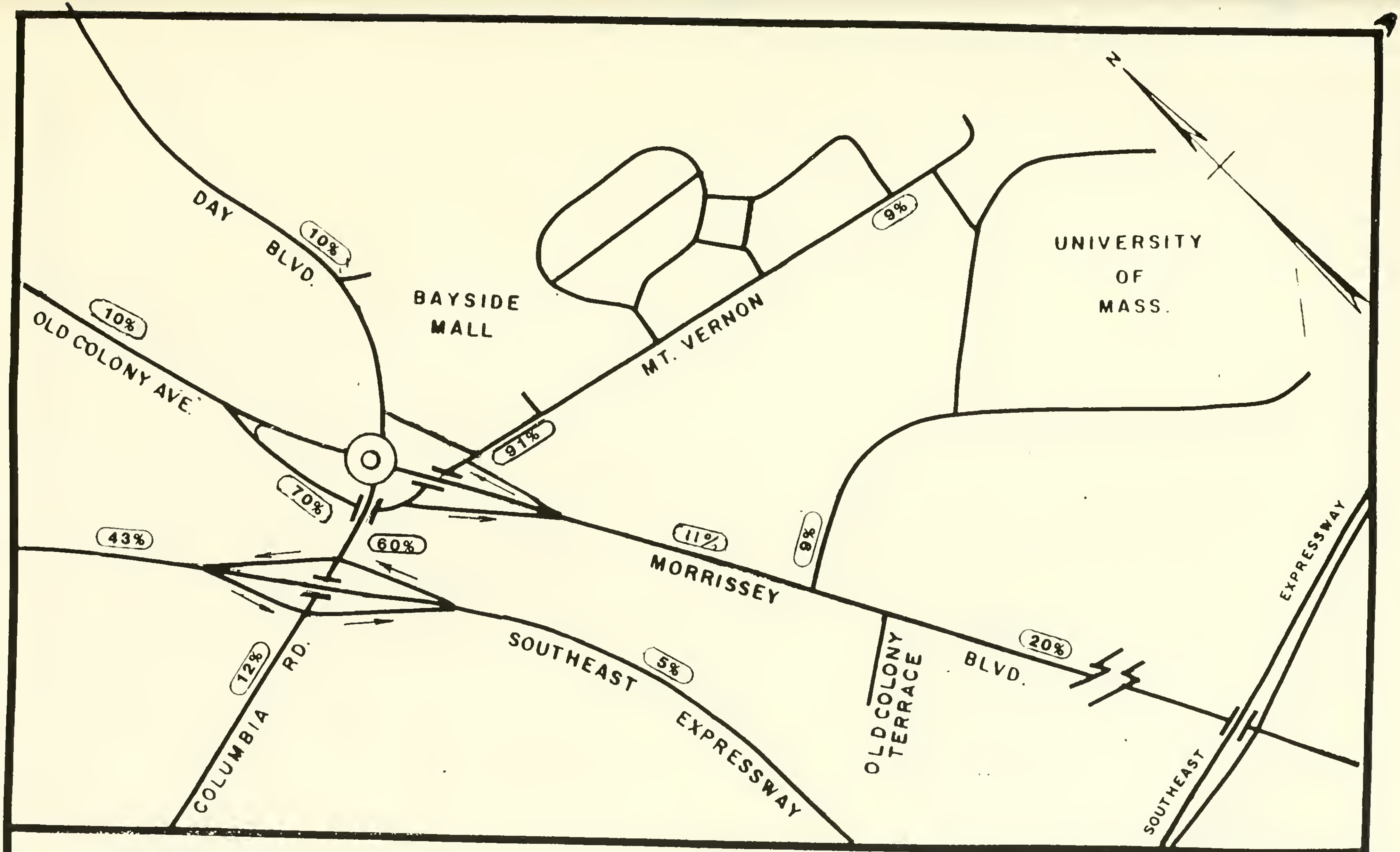
By observing existing traffic count patterns, and recognizing the fact that the Bayside Expo Center generates very low traffic in the A.M. peak hour, it was concluded that the P.M. peak hour (4:00 to 5:00 P.M.) be analyzed as the critical traffic period for intersectional capacity and LOS analyses. NOTE: Due to a specific known condition, A.M. peak-hour traffic was analyzed at the particular intersection of Morrissey Boulevard and U-Mass Roadway.

In Tables XI and XII, projected P.M. peak-hour total traffic volumes for 1990 and 2000 are set forth along with related average daily traffic listings for roadway links. The special A.M. peak-hour volumes for Morrissey Boulevard and U-Mass Roadway are also noted.

Further traffic volume data is included in a number of Appendix figures which show average weekday and P.M. peak-hour site-generated traffic volumes to and from the new development for 1990 and 2000.

Table XIV shows the results of P.M. peak-hour (and special case A.M.) capacity analyses for Alternatives "A" and "B", expressed as volume to capacity ratios. These indicate the existence of congestion as noted, and serve as input to air quality calculations. The underlying analyses also produce intersectional LOS which are dealt with in the next chapter in assessing impacts.

In order to give an indication of the relative contribution of the development to total traffic, Figure 24 shows a comparison of development-generated traffic with total traffic crossing a cordon line drawn around the development area, excluding the Southeast Expressway and certain legs of Kosciuszko Circle. The average daily traffic created by the development in the year 2000 amounts to 6.2% of total traffic.



COLUMBIA POINT PENINSULA
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Percentage Distribution
of Site - Generated Traffic

FIGURE 18

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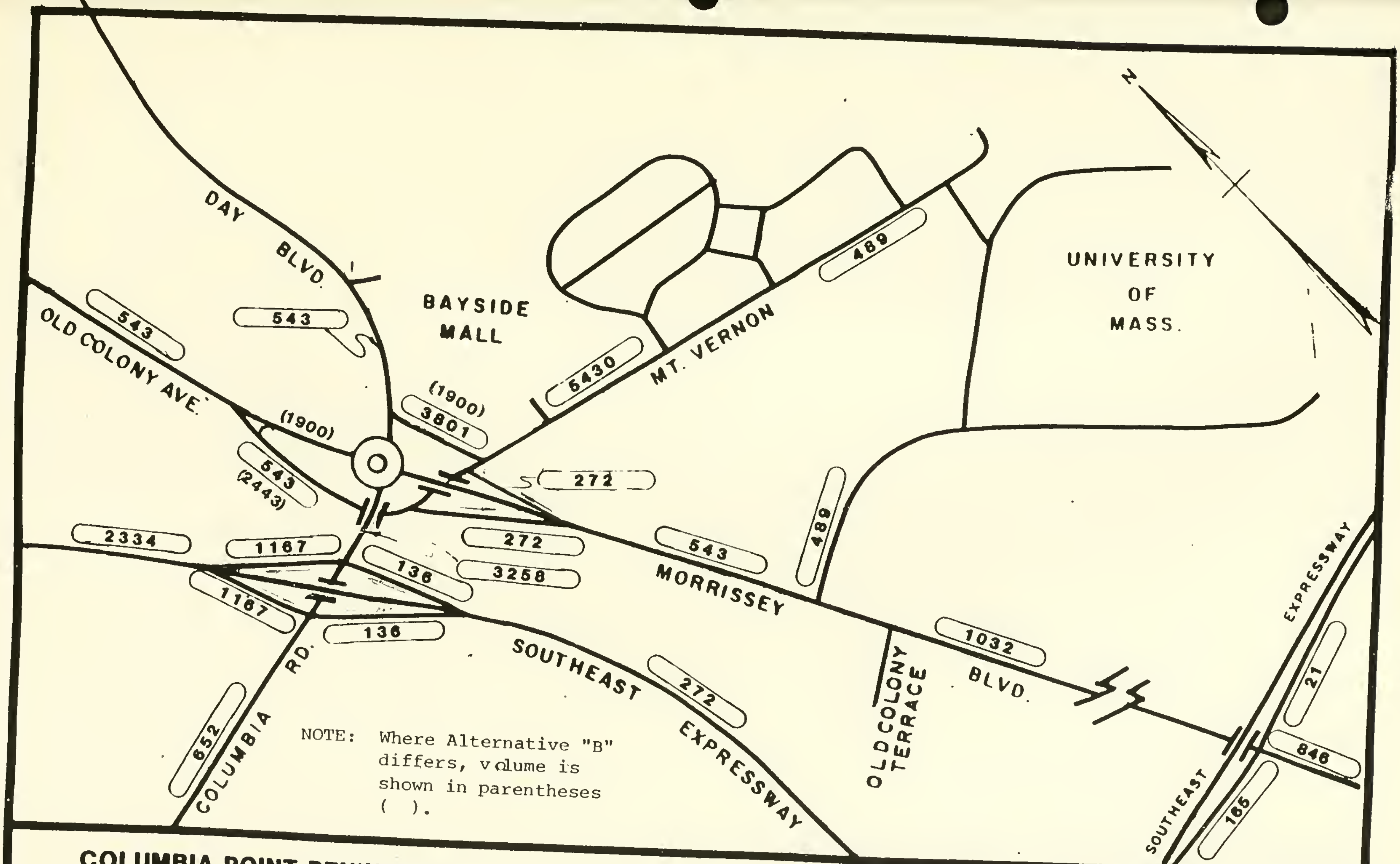

NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

COLUMBIA POINT PENINSULA
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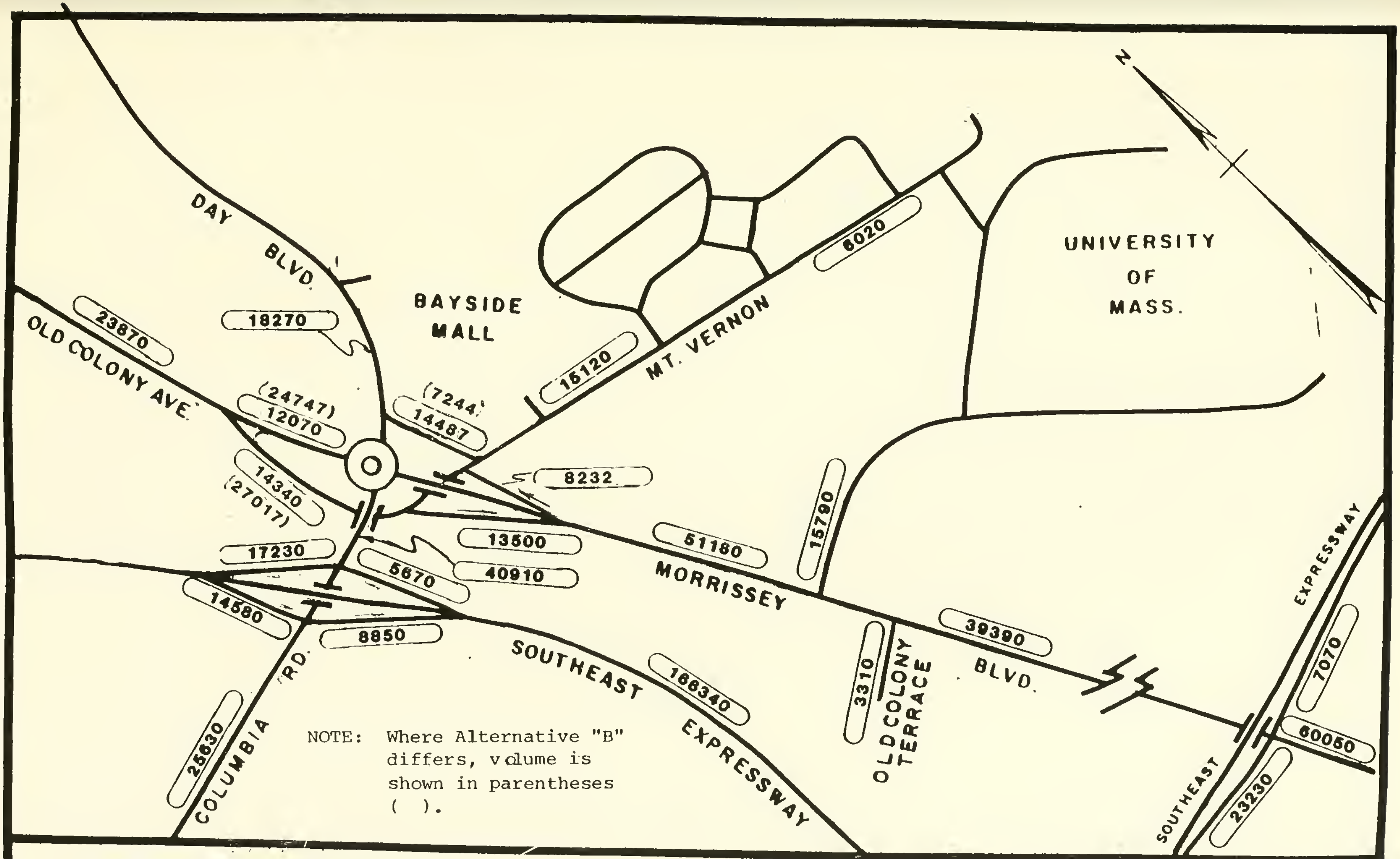
Average Weekday Daily Traffic
Site Generated
YEAR 1990
ALT."A"& "B"

FIGURE 19



NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

COLUMBIA POINT PENINSULA
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Average Weekday Daily Traffic
YEAR 1990
ALT."A"& "B"

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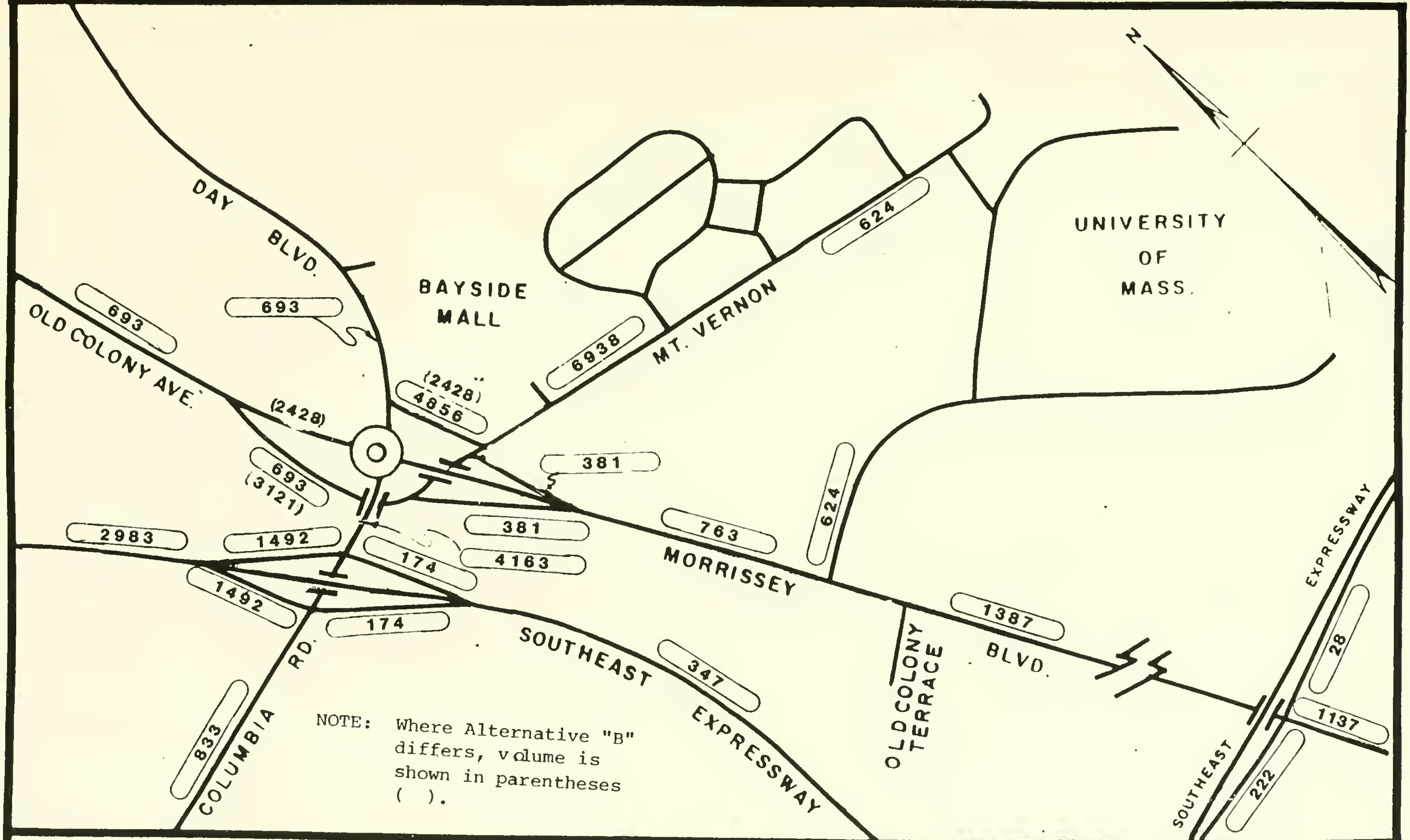
FIGURE 20



NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

COLUMBIA POINT PENINSULA
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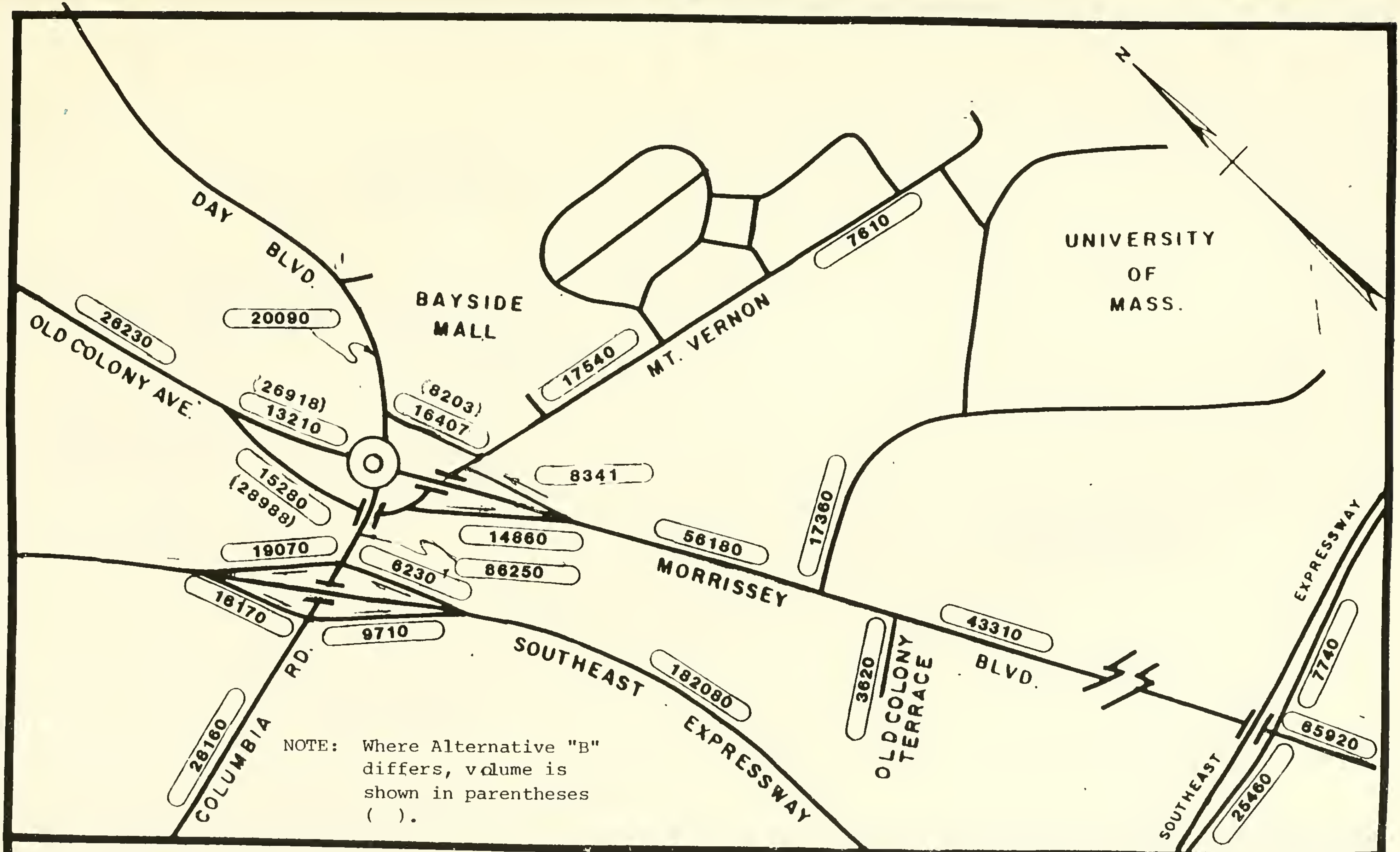
Average Weekday Daily Traffic
Site Generated
YEAR 2000
ALT. "A" & "B"

FIGURE 21



NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

COLUMBIA POINT PENINSULA
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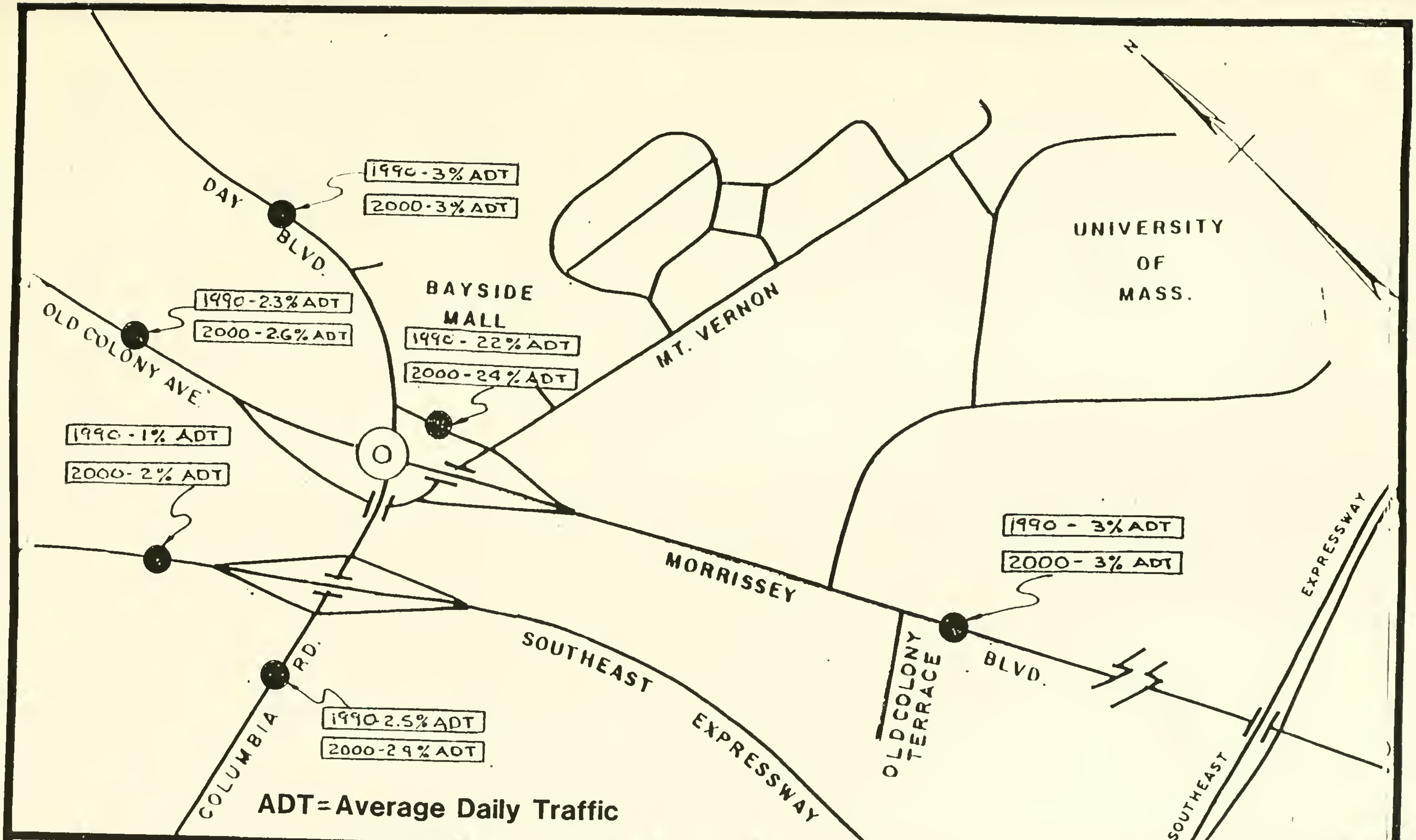
Average Weekday Daily Traffic
YEAR 2000
ALT."A" & "B"

FIGURE 22



COLUMBIA POINT PENINSULA
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PERCENTAGE OF NEW SITE-GENERATED
ADT TO TOTAL ADT

FIGURE 23

TABLE XI

COLUMBIA POINT REVITALIZATION PROGRAM (1990) - Alternate "A"

Traffic Volumes* on Major Project Area Streets and Highway Network

Street	P.M. Peak 4 - 5 P.M.	A.M. Peak 7 - 8 A.M.	AWDT
Southeast Expressway			
Southbound Ramp	692	--	13,970
Northbound Ramp	284	--	5430
Columbia Road			
Eastbound	1121	--	14,732
Westbound	1486	--	17,069
Wm. J. Day Boulevard			
Eastbound	1225	--	11,058
Westbound	888	--	7189
Wm. J. Day Boulevard Connector			
Northbound	804	--	10,874
Wm. J. Day Boulevard Connector			
Southbound	591	156	6139
Mt. Vernon Street			
Westbound	686	732	7229
Old Colony Avenue			
Eastbound	47	50	445
Morrissey Boulevard Off-ramp			
Northbound	490	305	8219
Old Colony Avenue			
Eastbound	1037	--	263
Westbound	347	--	3537
Morrissey Boulevard @ U-Mass Rd.			
Northbound	1034	3784	23,378
Southbound	2918	427	22,915
U-Mass Road			
Westbound	--	222	6985
Morrissey Blvd. @ Freeport St.			
Northbound	880	--	21,795
Southbound	2990	--	30,943
Freeport Street			
Eastbound	618	--	9586
Westbound	470	--	5054

*One-way intersectional approach volumes

TABLE XII

COLUMBIA POINT REVITALIZATION PROGRAM (2000) - Alternate "A"

Traffic Volumes* on Major Project Area Streets and Highway Network

Street	P.M. Peak 4 - 5 P.M.	A.M. Peak 7 - 8 A.M.	AWDT
Southeast Expressway			
Southbound Ramp	722	--	15,050
Northbound Ramp	305	--	5800
Columbia Road			
Eastbound	1197	--	14,832
Westbound	1629	--	17,570
Wm. J. Day Boulevard			
Eastbound	1259	--	11,554
Westbound	930	--	7273
Wm. J. Day Boulevard Connector			
Northbound	910	--	11,459
Wm. J. Day Boulevard Connector			
Southbound	621	199	6716
Mt. Vernon Street			
Westbound	766 (-51)	761	7439 (-576)
Old Colony Avenue			
Eastbound	48	100	176
Morrissey Boulevard Off-ramp			
Northbound	531	353	8131
Old Colony Avenue			
Eastbound	1098	--	347
Westbound	505 (-51)	--	4002 (-576)
Morrissey Boulevard @ U-Mass Rd.			
Northbound	1096	4034	23,505
Southbound	3107 (-51)	464	23,082 (-576)
U-Mass Road			
Westbound	634 (+51)	238	7060 (+576)
Morrissey Blvd. @ Freeport St.			
Northbound	939	--	21,929
Southbound	3183	--	31,216
Freeport Street			
Eastbound	650	--	9613
Westbound	490	--	5063

( ) indicates difference in no-build situation

*One-way intersectional approach volumes

TABLE XIII

COLUMBIA POINT

VOLUME TO CAPACITY RATIOS

(P.M. PEAK HOUR 4:00-5:00)

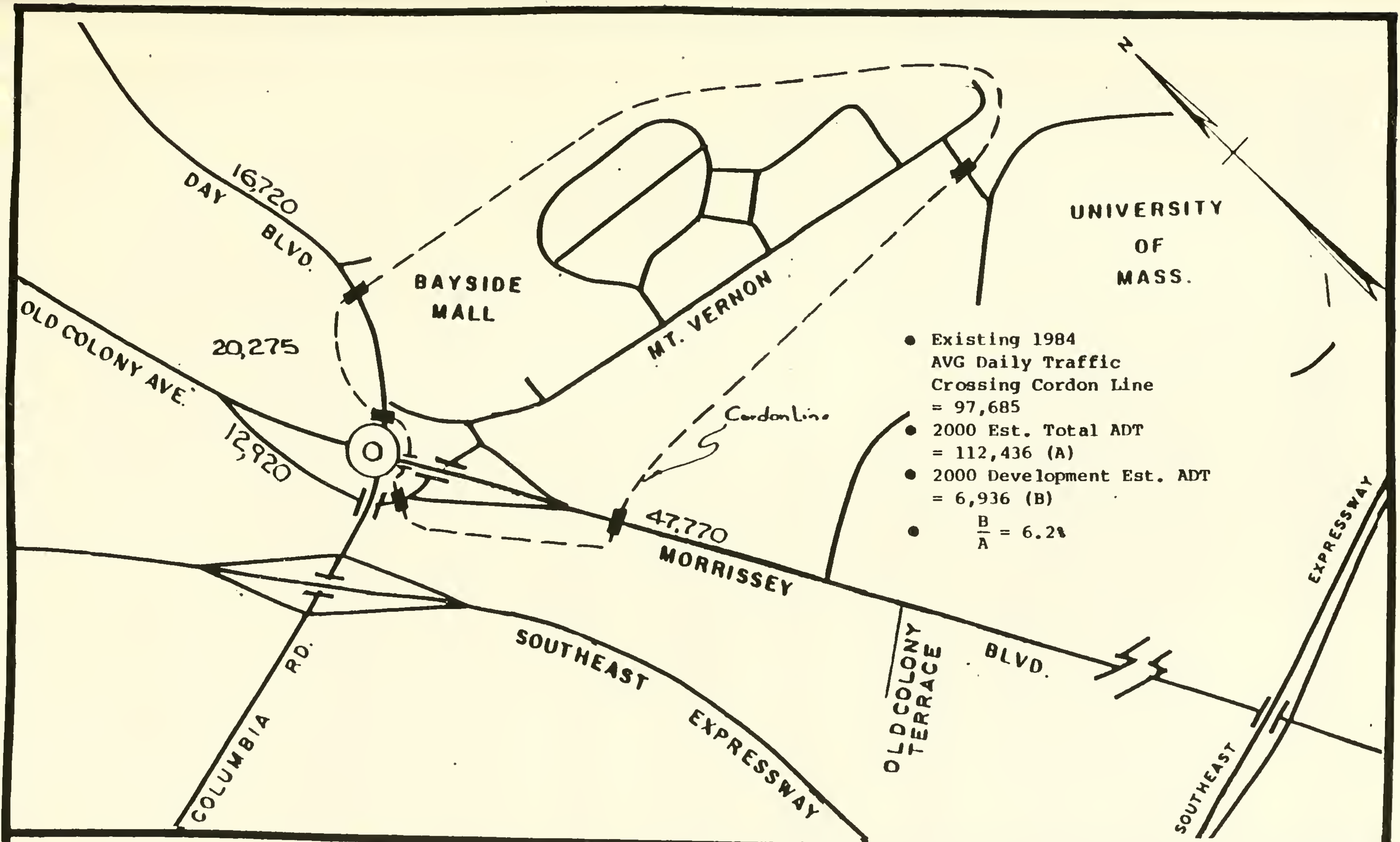
Intersection	1984	1990	2000	Proposed Roadway 1990		2000	
		No Roadway Build		Alt.			
	Existing			"A"	"B"	"A"	"B"
Columbia Rd.-Expressway Southbound Off-Ramp							
Columbia Rd. (west)	.78	1.1	1.1	1.1	1.1	1.1	1.1
Columbia Rd. (east)	.78	.94	1.2	.94	.94	1.2	1.2
Expressway Off-Ramp (south)	.81	1.1	1.2	.94	.94	1.2	1.2
Columbia Rd.-Expressway Northbound Off-Ramp							
Columbia Rd. (west)	.87	.96	1.1	.96	.96	1.1	1.1
Columbia Rd. (east)	.74	.90	.97	.90	.90	.97	.97
Expressway Off-Ramp (north)	.86	.99	1.1	.99	.99	1.1	1.1
Wm. J. Day Blvd.-Day Blvd. Connector							
Day Blvd. (west)	.86	.97	.85	.77	.69	.90	.69
Day Blvd. (east)	.67	.97	.92	.64	.70	.74	.70
Day Connector (north)	.86	.97	.94	.76	--	.88	--
Day Connector-Morrissey Off-Ramp							
Old Colony (east)	0	.06	.06	.15	.07	.14	.07
Mt. Vernon St. (west)	.44	.87	.99	.53	.49	.59	.57
Morrissey Off-Ramp (north)	.22	.88	.96	.53	.47	.59	.56
Day Connector (south)	.44	.81	.86	.22	.36	.25	.43
Old Colony-Morrissey Southbound On-Ramp							
Old Colony (east)	.32	.32	.32	.07	.08	.07	.08
Old Colony (west)	.24	.28	.32	.26	.28	.26	.28

VOLUME TO CAPACITY RATIOS (Continued)

Intersection	1984	1990	2000	Proposed Roadway			
		No Roadway Build		1990 Alt.		2000 Alt.	
	Existing			"A"	"B"	"A"	"B"
Morrissey Blvd.-U-Mass Rd.							
Service Rd.	.69	.74	.80	.74	.80	.74	.80
U-Mass Rd. (west)	.72	.73	.84	.73	.84	.73	.84
Morrissey Blvd. (north)	.70	.37	.48	.37	.48	.37	.48
Morrissey Blvd. (south)	.31	.75	.83	.75	.83	.75	.83
Morrissey Blvd.-Freeport St.							
Morrissey Blvd. (south)	1.10	1.20	1.30	1.20	1.30	1.20	1.30
Morrissey Blvd. (north)	1.10	1.20	1.30	1.30	1.30	1.30	1.30
Freeport St. (east)	1.10	1.20	1.30	1.20	1.30	1.20	1.30
Freeport St. (west)	1.10	1.20	1.30	1.20	1.30	1.20	1.30

THE MEANING OF THE V/C RESULTS

V/C	IMPLICATIONS
0.70 and below......	No congestion expected
0.80................	Congestion very unlikely
0.90................	Some delays encountered; some congestion during peak events or bad weather
1.00................	Some congestion will be encountered during the peak hour
1.10................	The entire peak hour may be congested
1.20 and above......	Congestion will extend beyond the peak hour unless traffic travels at other times, involves more transit/shared ride, or trips aren't made (less development; more building vacancies).



- Existing 1984 AVG Daily Traffic Crossing Cordon Line = 97,685
- 2000 Est. Total ADT = 112,436 (A)
- 2000 Development Est. ADT = 6,936 (B)
- $\frac{B}{A} = 6.2\%$

COLUMBIA POINT PENINSULA
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TRAFFIC VOLUME OVERVIEW OF DEVELOPMENT

FIGURE 24

VI. ASSESSMENT OF TRANSPORTATION IMPACTS AND MEASURES TO MINIMIZE NEGATIVE EFFECTS

ROADWAY NETWORK CONGESTION

As in many urban developments, one of the chief concerns is how the generation of additional automotive traffic will impact the project area by the creation of additional congestion, delays, waste of energy and air pollution. In this present case, projected future traffic has been calculated and assigned to roadway facilities, as described in Chapter V. This future traffic has been analyzed with respect to roadway capacity to indicate Levels of Service ("LOS") at key intersections for peak-hour periods, for both no-build and build conditions. These LOS are shown in Table XIV and are highlighted in Figure 25 for the most critical case of year 2000. (See Appendix for supplementary Figures).

Two features dominate the LOS presentation. One is that the values for the no-roadway-build are in most instances not different than with the proposed street improvements. The second is that no LOS F intersections are created which do not exist today during peak-hour conditions.

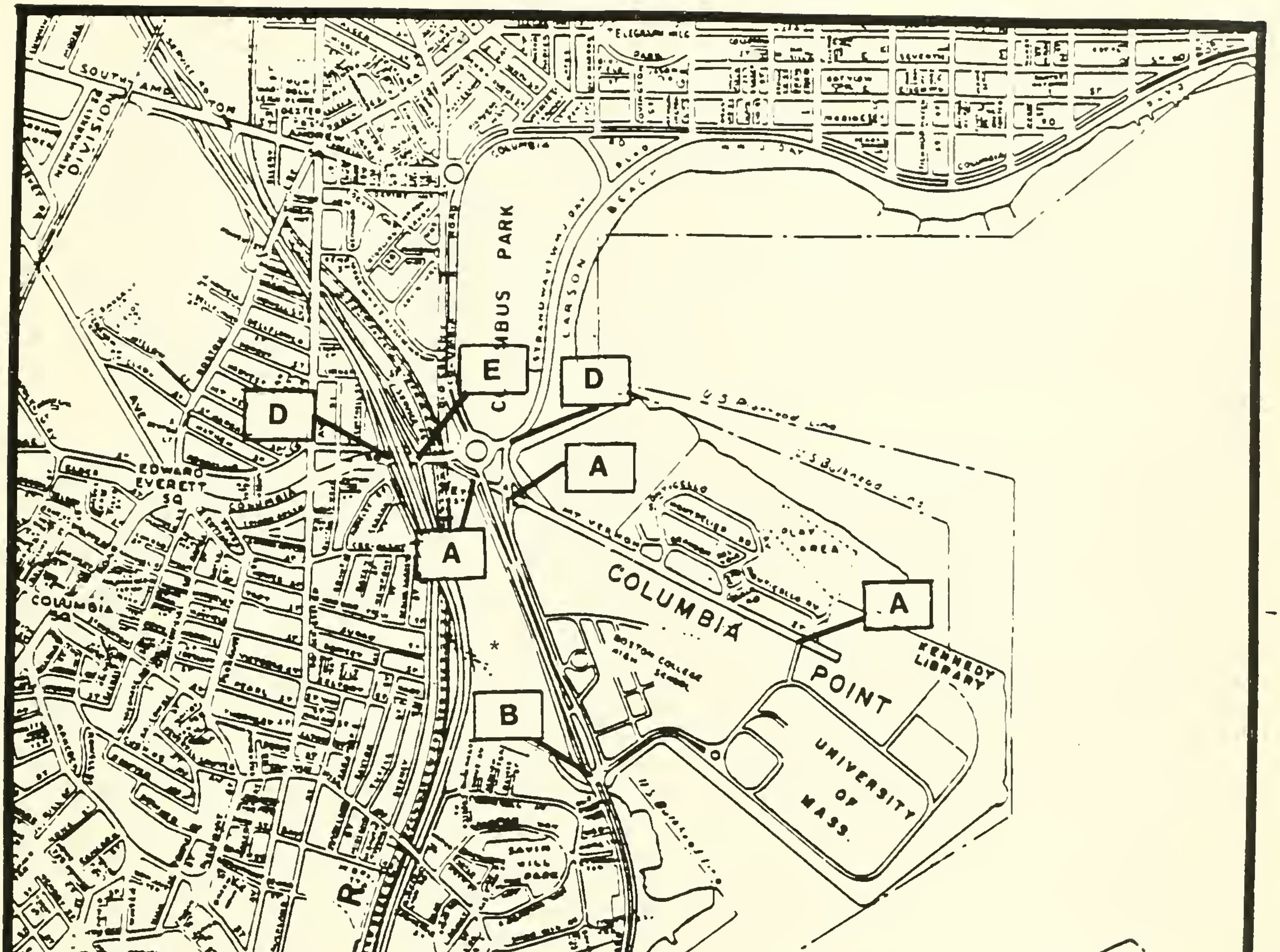
The first situation relates to the purpose and nature of the proposed improvements. These do not directly create much additional capacity, as described earlier and restated below:

- The operational improvements to the Day Boulevard/Mt. Vernon Connector intersection offer a slight increase in capacity which would not cause a full LOS level change, but do promise safety and operational improvements where direct police traffic direction would not be required so often.

- Off-setting the Morrissey Boulevard northbound off-ramp to Mt. Vernon Street is intended to eliminate the by-passing of traffic from Morrissey Boulevard to Day Boulevard via the Connector.

- The reconstruction of Mt. Vernon Street is intended to eliminate excess roadway, give better pedestrian service and substantially upgrade the street appearance, all without providing additional capacity at critical points.

- The connection of Mt. Vernon Street with U-Mass Roadway is directed toward allowing all peninsula activities the option of using either gateway (U-Mass or Expo Center area), the opportunity to drive from one peninsula point to another without exiting to adjacent arterial roadways, more bus shuttle flexibility and to help integrate Columbia Point land uses into one community.



*F in 7 - 8 A.M.
Peak Hour

COLUMBIA POINT PENINSULA
REVITALIZATION PROGRAM

P.M. Peak Hour Level Of Service
4:00-5:00
2000 ALT."A"

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FIGURE 25

The action of interconnecting the roadways on the peninsula causes a potential shift in traffic patterns. It is known that some vehicles from the U-Mass/JFK Library areas will choose to use Mt. Vernon Street instead of U-Mass Roadway, while some Mt. Vernon Street area vehicles will use U-Mass Roadway instead of Mt. Vernon. The judgement was made that a net shift will tend towards U-Mass Roadway. The estimate of this was slightly under one-half of new development generated traffic (9% of total generation) destined for Morrissey Boulevard south, and comprises less than 4% of total U-Mass Roadway daily traffic in year 2000. Thus the effect of the proposed improvements on the capacity/LOS situation is manifest primarily in the U-Mass/Mt. Vernon Street interconnection producing a minor traffic circulation shift. The maximum peak-hour shift of less than a net difference of 50 cars is scarcely enough to cause a perceptible LOS change.

The worsening of Columbia Road and southbound expressway off-ramp intersection LOS from to is in part linked to the additional traffic from the new Columbia Point development, mainly new residents in the commuter peak hours, focussing on this point (60% of total generation). The estimated generated traffic may be somewhat more peaked in the commuter hours than will be the case (22% of resident daily arrivals in P.M. Peak), but this serves to highlight the effect.

The proposed roadway improvements are confined to the peninsula area and do not affect the Columbia Road critical points. This interchange area would require a regional type improvement or a regional shift or decrease in traffic. The proposed improvements set forth here neither improve nor worsen the LOS " " situation.

A summary of the intersections suffering from a future LOS "F", or breakdown of traffic flow, are noted below. The conditions exist for both existing and future years:

A.M. Peak Hour - Morrissey Boulevard and U-Mass Roadway (analyzed separately in A.M. Peak as a special case)

P.M. Peak Hour - Morrissey Boulevard and Freeport Street

All other locations in the study area have LOS's of E, or above, pointing to tolerable operations in the peak hour. It should also be noted that only at intersections which are very close to the new development is the new development traffic generation significant in contributing to lower levels of service. The reader may recall Figure 23 which presents the percentage that new site-generated average daily traffic is of total traffic in year 2000. On the Day Boulevard Connector new site-generated traffic is 24 percent, while south of U-Mass Roadway on Morrissey Boulevard it is 3 percent. On the Expressway north of Columbia Road the percentage amounts to 2 percent.

NOTE ON PREBLE CIRCLE

The EOEA scope of work for this report requested that traffic analysis extend to include Preble Circle (intersection of Old Colony Avenue/Columbia Road and Preble Street). A review of existing conditions showed an apparent high level of service at this point, without significant traffic delays. Since future traffic predictions show that new development traffic consists of less than 3% of the year 2000 average daily traffic on Old Colony Avenue/Columbia Road, and since general growth is only about 8% above existing, no adverse conditions were foreseen.

TABLE XIV

Columbia Point Revitalization Program

Estimated Levels of Service - 4:00 - 5:00 P.M.

Intersection	No Roadway Build		Proposed Roadway Alt.				Existing
	1990	2000	"A" 1990	"B" 1990	"A" 2000	"B" 2000	
Columbia Road Expressway NB Off-ramp	D	D	D	D	D	D	D
Columbia Road Expressway SB Off-ramp	D	E	D	D	E	E	C
Wm. J. Day Boulevard Wm. J. Day Blvd. Connector	D	E	C	B	D	C	D
Old Colony Ave.- Morrissey Blvd. SB On-ramp	A	A	A	A	A	A	A
Mt. Vernon St.-Wm. J. Day Blvd. Connector	D	D	A	A	A	A	A
U-Mass -Morrissey Blvd. (in A.M. peak)	B (F)	C (F)	B (F)	C (F)	B (F)	C (F)	B (F)
Morrissey Blvd. Freeport St.	F	F	F	F	F	F	F

Levels of Service are based on volume-capacity ratios according to the Highway Capacity Manual (Highway Research Board, 1965). Levels range from A to F, with A representing free-flow traffic and excellent service conditions and F representing forced-flow, stop-and-go traffic and jammed conditions. Urban traffic conditions are considered acceptable if they are at LOS C or better.

Thus any mitigating measures applied only to the lessening of traffic generated by the new development have significant effect only at locations close to the sites, before traffic has dispersed into more general arterial volumes. Levels of service at locations with dominantly regional travel would require more regional solutions which are beyond the purvue of this project. Nevertheless, a number of regional measures are anticipated which should overcome to some extent the congestion at problem locations. These regional measures, along with local considerations, will be discussed below.

CONGESTION MITIGATION MEASURES - REGIONAL

As noted above, mitigation measures to overcome the observed and projected roadway congestion must be on a regional basis in addition to local actions. Measures relating to regional facilities that may be anticipated are:

(1) Red Line Improvements - The Red Line will benefit from two major actions which will help increase transit usage to Columbia Point. One is the alteration of JFK/U-Mass Station to serve Braintree branch trains. This will double the service rendered to Downtown and give access to South Shore riders who now must travel to Andrew Station and backtrack. The second is the introduction of six-car trains which has the potential of increasing capacity by 50% over the present four-car trains. Both actions may be complete by 1990.

(2) Southeast Expressway Reconstruction - Although the end result of Southeast Expressway reconstruction, now underway, will not add much additional capacity to the facility, safety and other operational benefits will be realized. This should help encourage corridor traffic to remain on the Expressway instead of using Morrissey Boulevard and South Boston roadways as a bypass to Downtown. This would directly relieve Morrissey Boulevard, Day Boulevard, Old Colony Avenue and Columbia Road/Expressway ramp area.

The management measures taken during the reconstruction, i.e. the encouragement of carpooling, transit, staggered work hours, water transportation, etc. should also serve to influence less "congesting" behavior by the travelling public.

(3) Central Artery/Third Harbor Crossing - The long-range proposal of depressing the Central Artery and building a Third Harbor Crossing should encourage greater use of the expressway system, as in (2). Presently, much of the Expressway bypass traffic seeks to avoid intown congestion on and extending from the Central Artery. The long-range project will provide additional Central Artery capacity with direct access to a new harbor crossing.

(4) Water Transportation - Increased emphasis is being given by the state to fostering a more extensive water transportation system. Insofar as South Shore travellers use available existing and future water service, the number of automobiles passing by or through the Columbia Point study area will be reduced.

(5) Regional Transportation Systems Management - As noted above, the Southeast Expressway work has focussed more attention on transportation management measures to operate the total transportation system more effectively. This "TSM" emphasis is expected to continue in general, encouraging use of transit, carpooling, staggered work hours and vanpooling, along with relatively low cost operational improvements which yield greater system efficiency. The more such TSM actions are utilized, the less the automotive burden on a strained system.

CONGESTION MITIGATION MEASURES - COLUMBIA POINT

Although it is clear that expected measures of a more regional nature are essential in overcoming congestion at critical points around Columbia Point, there are a number of more local actions which will help provide balanced access to Columbia Point. The proposed street improvements do not provide significant new capacity for the traffic from existing and proposed new development, so that greater reliance on higher vehicular occupancy and transit is necessary. Even with the improvements, as has been seen, problems remain which will be lessened by regional efforts, noted above, and more local measures, set forth below:

(1) U-Mass Roadway/Morrissey Boulevard Intersection Improvements - Although the U-Mass Roadway/Morrissey Boulevard Intersection is not included in proposed improvements, it experiences a Level of Service F in the A.M. peak hour. To help overcome this, BRA and U-Mass have had discussions pointing to a future cooperative (including MDC) examination of possible improvements at this key intersection. A review will be made first of low cost adjustments which could improve operations in the near future and a study of long-range, more extensive improvements will follow.

(2) Roadway Improvements adjacent to JFK/U-Mass Transit Station - Although roadway improvements to the intersection of Old Colony Avenue and the southbound on-ramp to Morrissey Boulevard/station access drive are not part of the roadway proposals in this report, they are important for the functioning of the nearby network, particularly if Alternative "B" is chosen.

The current geometry along Old Colony at this point is awkwardly constrained by underpass conditions (under Columbia Road and Morrissey Boulevard connectors to Kosciuszko Circle) and an old Foundry site which has been acquired by the MBTA in association with station improvements. The MBTA is including roadway modifications to the roadways in the station plans which would improve turning geometry, widen as possible, and increase visibility. As the proposed improvements of this report, especially Alternative "B" funnel additional traffic into this area, the MBTA-sponsored work will be most valuable in maintaining good traffic operations, including important shuttle bus movements.

(3) Bus Shuttles - The improved regional transportation improvements to the Red Line and JFK/U-Mass Station should be matched with future expanded bus shuttles, particularly to the Bayside Mall and new development areas, and the established U-Mass shuttle service should be maintained and enhanced where possible. This improved local distribution of people, coupled with the Red Line betterments will help reduce auto usage further.

(4) TSM Measures - In the more local sense, management actions can go far in helping reduce congestion. Columbia Point businesses and institutions can encourage transit use through incentives, cooperate in scheduling special events so that, where possible, conflicts do not occur, coordinate shuttle service, etc.

(5) Water Transportation - Boat service for Columbia Point should be tied into the evolving regional water system. This could give both service to the Downtown area as well as the South Shore. Some dredging and terminal work would be necessary to accomplish this. Some current proposals address this issue.

(6) Parking - As now envisioned, parking will match the demands of new development. The Expo Center has "adopted" the parking areas of the former Bayside Mall and will consider the building of an additional parking garage if needs dictate. Housing plans include parking sufficient for residents' needs. U-Mass will continue to attempt to maintain a balance between its at times inadequate parking supply and transit access. It is important that parking be monitored as a short-fall in parking, or poor management of it, could lead to wanton on-street parking where traffic could be impeded or where adjacent neighborhoods could be adversely affected.

CONCLUSION

It would appear in summary that the proposed roadway improvements, carefully designed, along with a series of other transportation initiatives as mitigating measures, will likely accommodate the new development and other future traffic at tolerable levels of service. It must be stressed that this is dependent on the mitigating measures aimed at greater use of public transportation and less peaking of automotive travel. The features of the roadway improvements which address environmental and operational factors other than strict roadway capacity represent the major benefits being produced.

With respect to Alternatives "A" and "B", it is the feeling of the preparers of this report that Alternative "A" should be implemented, despite the technical workability* of either scheme, for the following reasons:

(1) The established major connections to Columbia Point should be retained, particularly since traffic generation will increase.

(2) The elimination of the Mt. Vernon Street to Day Boulevard link in Alternative "B" leaves only the exit via Old Colony Avenue. This is a less legible linkage with no alternative (except indirectly by the Mt. Vernon Street/ U-Mass Roadway connection proposed).

(3) Internal to the Expo Center site, Alternative "B" would place more exiting pressures on the ancillary access to and from Day Boulevard in the Teachers Union area.

Points in favor of Alternative "B", not considered by the preparers as sufficient for a preference are:

(1) Reclamation of roadway area for landscaping or other uses.

(2) Simplification of the Connector/Day Boulevard intersection, with potential benefit to Kosciuszko Circle operations.

(3) A marginal reduction in traffic demand to Day Boulevard (but increase to the Columbia Road/Old Colony Avenue intown routing).

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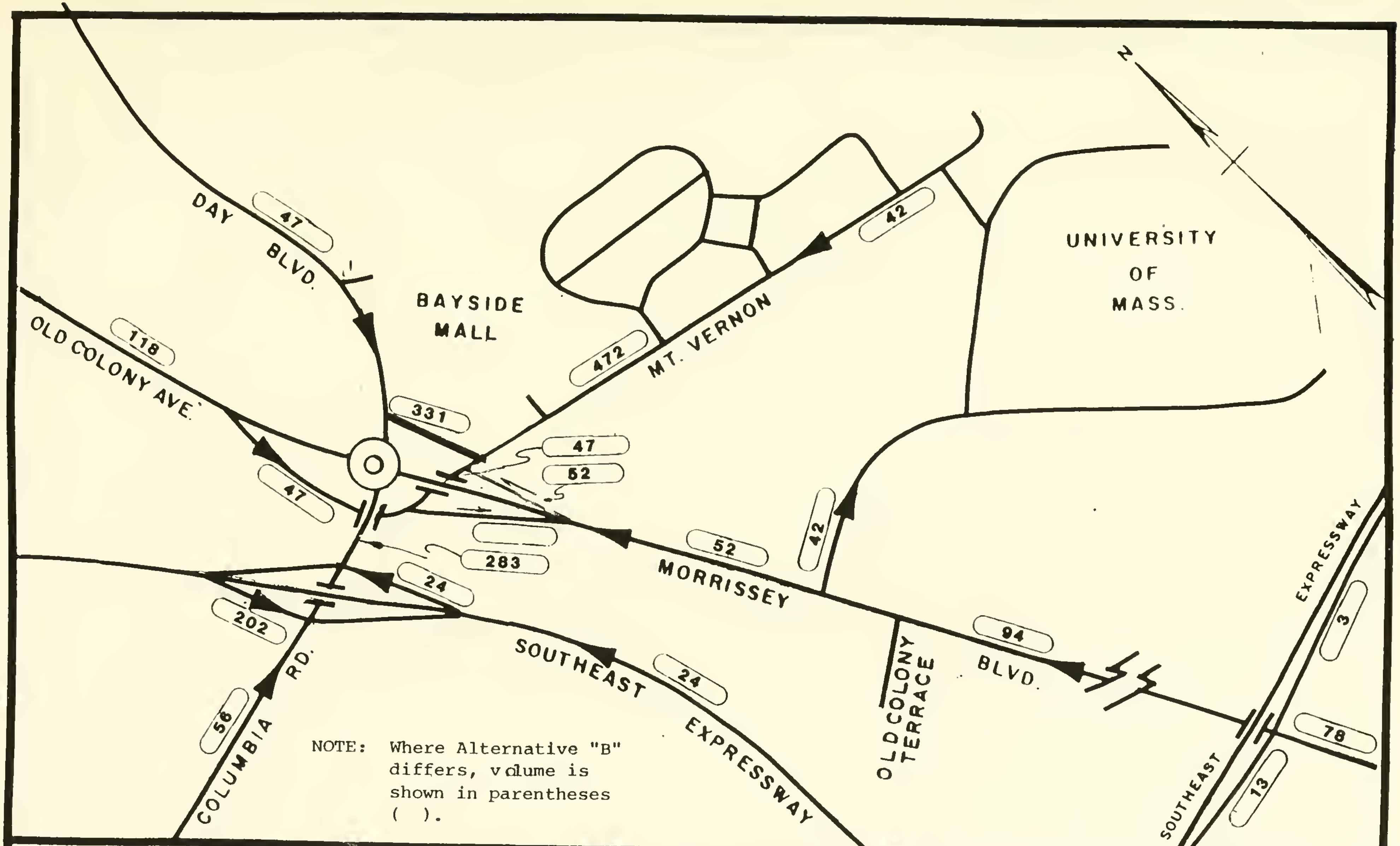
*In addition to capacity and LOS calculation, a separate peak-hour queuing analysis was done for both Alternatives, with differing characteristics but similar network impacts.

APPENDIX A

Assorted Additional Figures Showing Traffic Data



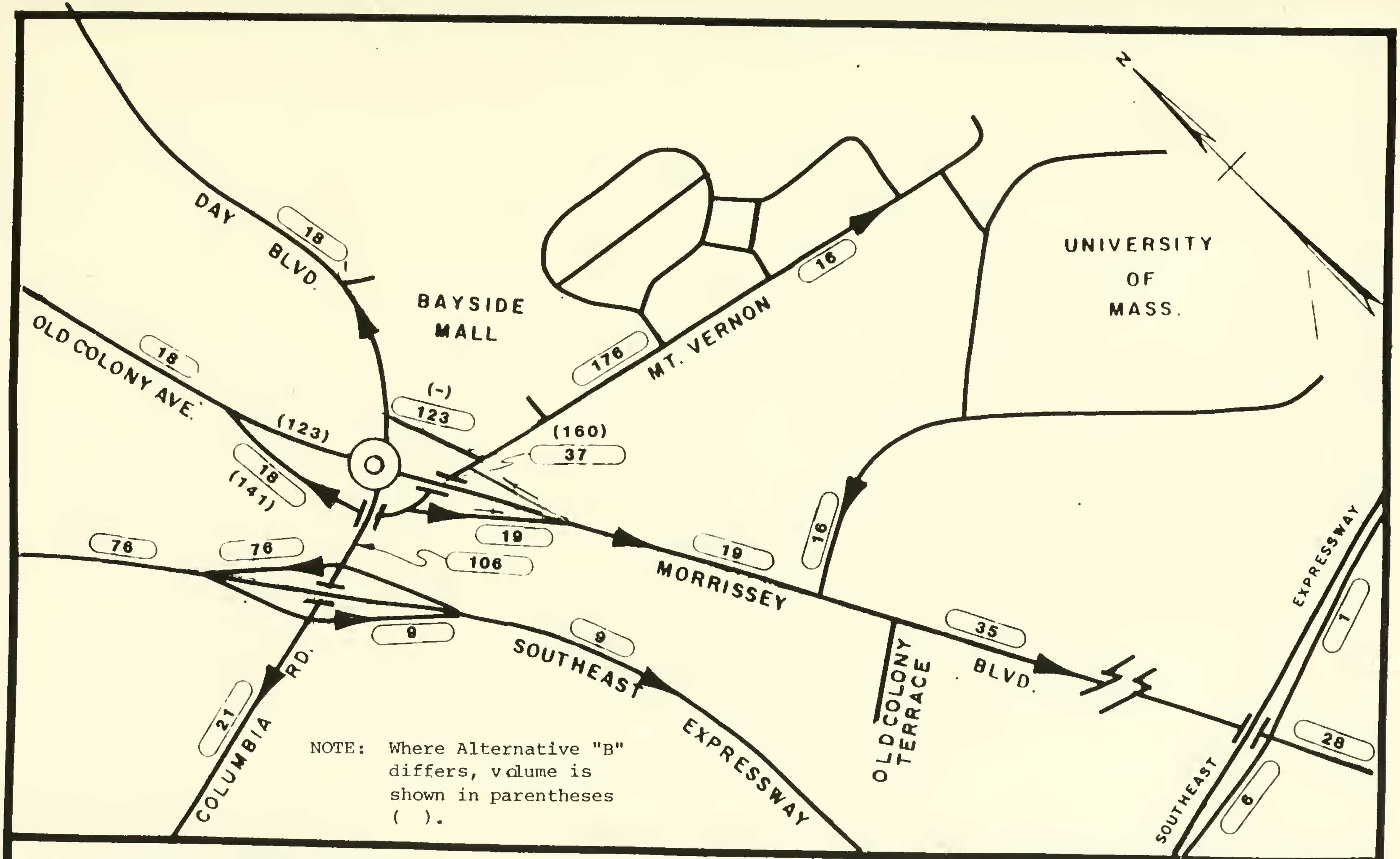
NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

COLUMBIA POINT PENINSULA
REVVITALIZATION PROGRAM

Traffic Assignments P.M. Peak Hour To Columbia Point
YEAR 1990
ALT. "A" & "B"

boston redevelopment authority
transportation planning department

FIGURE A-1



NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

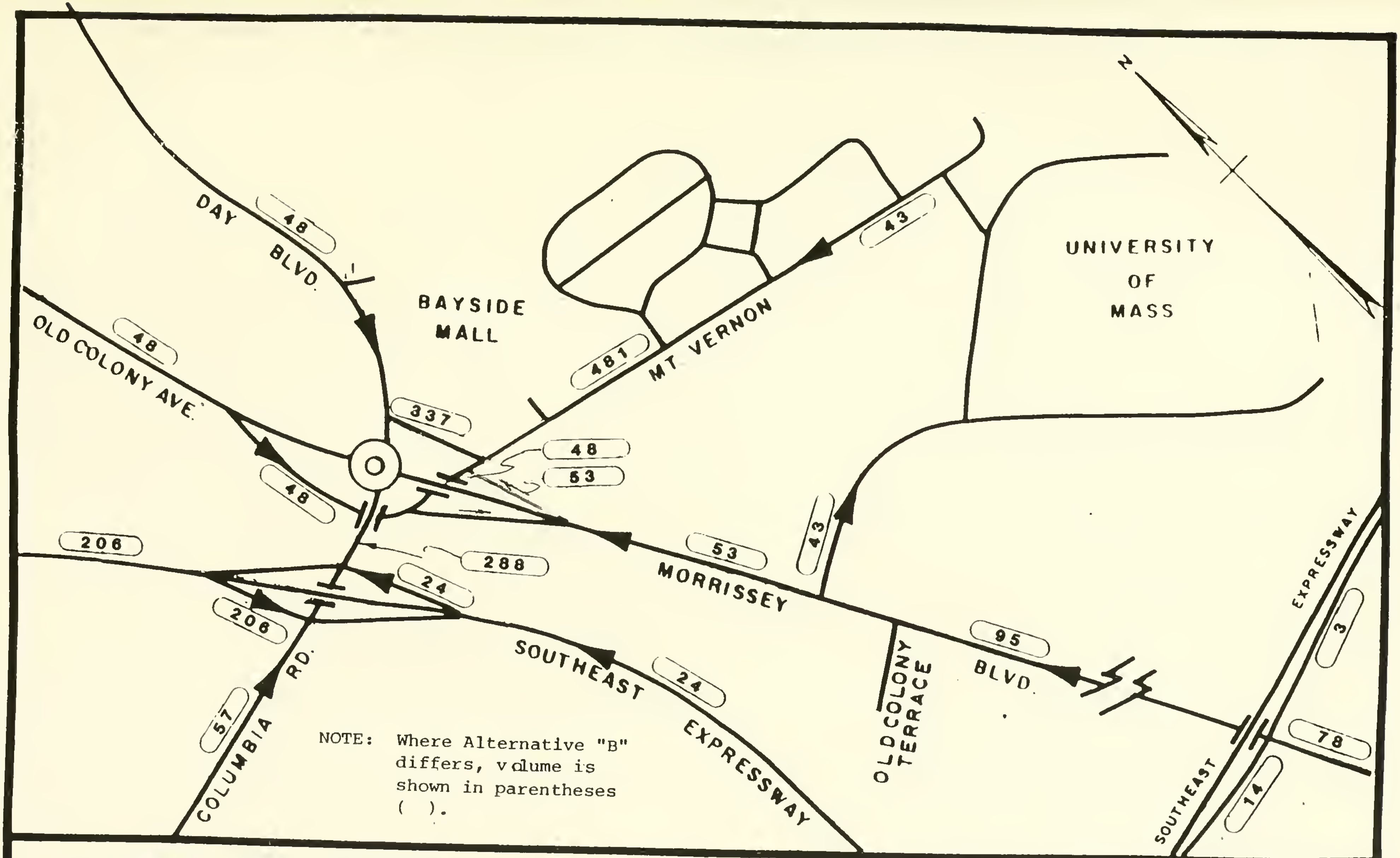
COLUMBIA POINT PENINSULA

REVVITALIZATION PROGRAM

Traffic Assignments P.M. Peak Hour From Columbia Point
YEAR 1990
ALT. "A" & "B"

boston redevelopment authority
transportation planning department

FIGURE A-2



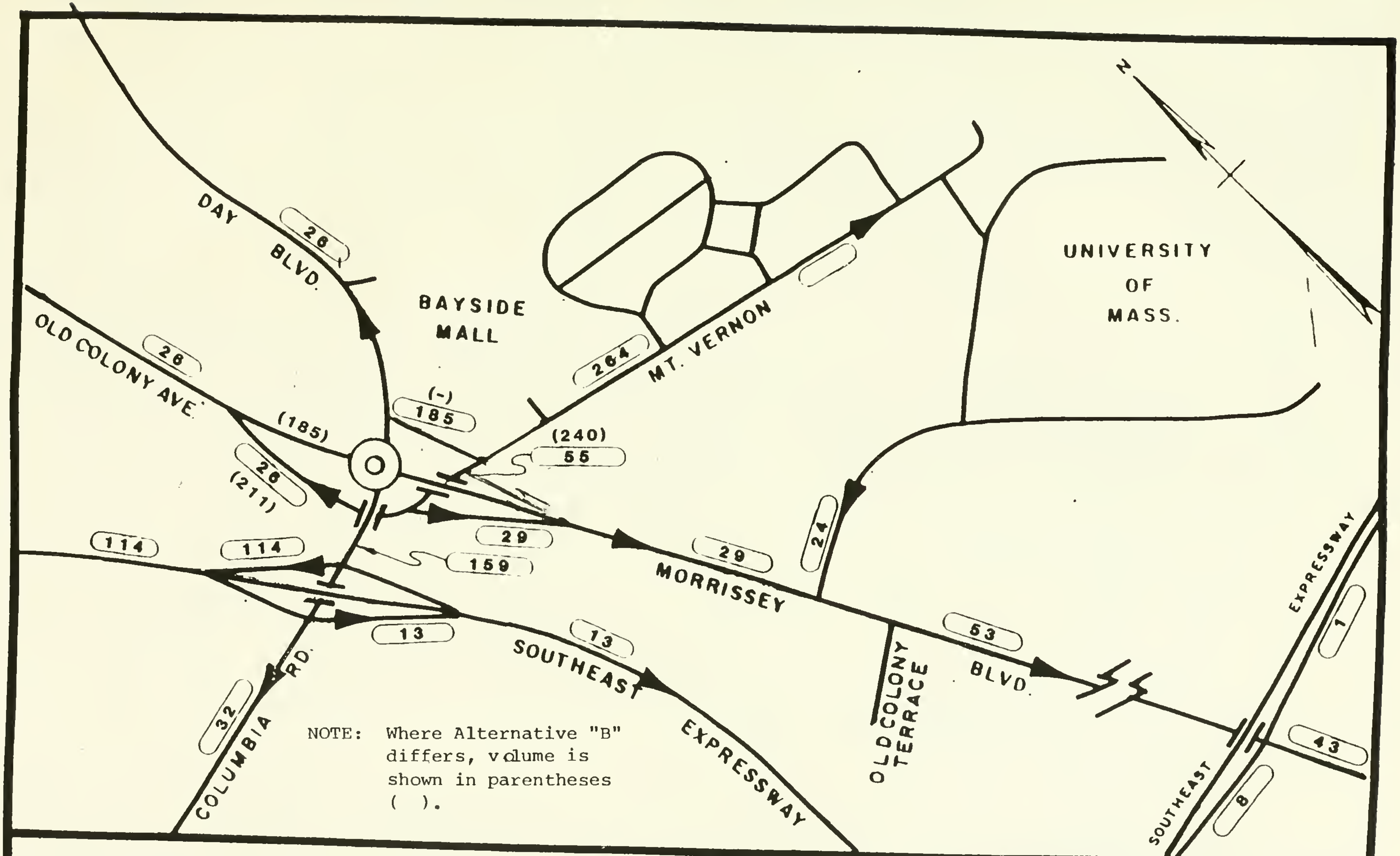
NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

COLUMBIA POINT PENINSULA
REVVITALIZATION PROGRAM

Traffic Assignments P.M. Peak Hour To Columbia Point
YEAR 2000
ALT."A" & "B"

boston redevelopment authority
transportation planning department

FIGURE A-3



NOTE: Where Alternative "B" differs, volume is shown in parentheses ( ).

COLUMBIA POINT PENINSULA

REVVITALIZATION PROGRAM

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Traffic Assignments P.M. Peak Hour From Columbia Point
YEAR 2000
ALT."A" & "B"

FIGURE A-4

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